

SEQUENCE LISTING

<110> Benfey, Phillip N.
Di Laurenzio, Laura
Wysocka-Diller, Joanna
Malamy, Jocelyn E.
Pysh, Leonard
Helariutta, Yrjo
Bruce, Wesley
Lim, Jun

<120> Scarecrow Gene, Promoter and Uses Thereof

<130> 5914-066

<140> 09/265,585

<141> 1999-03-10

<150> 08/842,445

<151> 1997-04-24

<150> 08/638,617

<151> 1996-04-26

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<170> PatentIn Ver. 2.0

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<212> DNA

<213> Arabidopsis thaliana

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 Ala Ser Glu Met Ser Ser Asn Pro Asp Tyr Asn Asn Ser Ser Arg Pro
 50 55 60
 Pro Arg Arg Val Ser His Leu Leu Asp Ser Asn Tyr Asn Thr Val Thr
 65 70 75 80
 Pro Gln Gln Pro Pro Ser Leu Thr Ala Ala Ala Thr Val Ser Ser Gln
 85 90 95
 Pro Asn Pro Pro Leu Ser Val Cys Gly Phe Ser Gly Leu Pro Val Phe
 100 105 110
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 115 120 125
 Asp Gln Asp Ser Ser Ser Ser Ser Ala Ser Pro Thr Val Trp Val Asp
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 Ala Ile Ile Arg Asp Leu Ile His Ser Ser Thr Ser Val Ser Ile Pro
 145 150 155 160
 Gln Leu Ile Gln Asn Val Arg Asp Ile Ile Phe Pro Cys Asn Pro Asn
 165 170 175
 Leu Gly Ala Leu Leu Glu Tyr Arg Leu Arg Ser Leu Met Leu Leu Asp
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 Pro Ser Ser Ser Ser Asp Pro Ser Pro Gln Thr Phe Glu Pro Leu Tyr
 195 200 205
 Gln Ile Ser Asn Asn Pro Ser Pro Pro Gln Gln Gln Gln Gln His Gln
 210 215 220
 Gln Gln Gln Gln Gln His Lys Pro Pro Pro Pro Pro Ile Gln Gln Gln
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 245 250 255
 Thr Ala Thr Val Pro Ala Val Gln Thr Asn Thr Ala Glu Ala Leu Arg
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 Glu Arg Lys Glu Glu Ile Lys Arg Gln Lys Gln Asp Glu Glu Gly Leu
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 Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser Gln Leu Ser
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 435 440 445
 Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu Pro Phe Glu Phe Cys
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 Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg Leu Asn Val
 465 470 475 480
 Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His Ser Leu Tyr
 485 490 495
 Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu Gln Arg Leu
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 Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser His Ala Gly
 515 520 525
 Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu
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 Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu Glu Arg His
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 Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu Ser Trp Arg
 580 585 590
 Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu Ala Gly Asn
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 Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro Ser Asp Gly
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<213> *Saccharomyces cerevisiae*

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<213> *Arabidopsis thaliana*

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<213> *Mus musculus*

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<210> 7

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<213> *Homo sapiens*

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Val Arg Leu Met Lys Asn Arg Glu Ala Ala Arg Glu Cys Arg Arg Lys
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<213> Zea mays

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Lys Ala Ala His Leu Lys Glu
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<210> 10
<211> 23
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<213> Zea mays

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Met Arg Gln Ile Arg Asn Arg Asp Ser Ala Met Lys Ser Arg Glu Arg
1 5 10 15

Lys Lys Ser Tyr Ile Lys Asp
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<210> 11
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<213> Oryza sativa

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<213> Arabidopsis thaliana

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<213> Arabidopsis thaliana

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<213> Arabidopsis thaliana

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<213> Arabidopsis thaliana

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<223> Xaa=unknown amino acid

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<213> Zea mays

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 <223> Xaa = STOP

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			20					25					30		
Ala	Ile	Ala	Glu	Ala	Val	Lys	Asn	Glu	Ser	Phe	Val	His	Ile	Ile	Asp
		35				40					45				
Phe	Gln	Ile	Ser	Gln	Gly	Gly	Gln	Trp	Val	Ser	Leu	Ile	Arg	Ala	Leu
50					55						60				
Gly	Ala	Arg	Pro	Gly	Gly	Pro	Pro	Asn	Val	Arg	Ile	Thr	Gly	Ile	Asp
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			20					25					30		
Glu	Gly	Pro	Pro	His	Leu	Arg	Ile	Thr	Gly	Val	His	His	Gln	Lys	Glu
			35				40					45			
Val	Leu	Glu	Gln	Met	Ala	His	Arg	Leu	Ile	Glu	Glu	Ala	Glu	Lys	Leu
	50					55				60					
Asp	Ile	Pro	Phe	Gln	Phe	Asn	Pro	Val	Val	Ser	Arg	Leu	Asp	Cys	Leu
65					70				75					80	

Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
 85 90 95
 Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
 100 105 110
 Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val Asp
 115 120 125
 Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
 130 135 140
 Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
 145 150 155 160
 Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
 165 170 175
 Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
 180 185 190
 Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
 195 200 205
 Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
 210 215 220
 Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
 225 230 235 240
 Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
 245 250 255
 His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
 260 265 270
 Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
 275 280 285
 Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
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 Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
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 Trp Arg Cys Arg Lys Xaa
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<220>
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 <223> Xaa = STOP

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			20					25					30		
Met	Ala	Ala	Ser	Gly	Lys	Phe	Ile	Tyr	Arg	Ala	Leu	Lys	Cys	Lys	Glu
		35					40					45			

Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
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 Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
 65 70 75 80
 Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
 85 90 95
 Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
 100 105 110
 Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
 115 120 125
 Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Asn Leu Arg Leu
 130 135 140
 Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
 145 150 155 160
 Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
 165 170 175
 Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
 180 185 190
 Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
 195 200 205
 Val Lys Ser Leu Asn Pro Leu Val Thr Val Val Glu Gln Asp Val Asn
 210 215 220
 Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu Tyr
 225 230 235 240
 Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu Ser
 245 250 255
 Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile Val
 260 265 270
 Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu Ala
 275 280 285
 Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro Lys
 290 295 300
 Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys Gln
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Gln	Glu	Ala	Phe	Glu	Arg	Glu	Glu	Arg	Val	His	Ile	Ile	Asp	Leu	Asp
1				5				10					15		
Ile	Met	Gln	Gly	Leu	Gln	Trp	Pro	Gly	Leu	Phe	His	Ile	Leu	Ala	Ser
			20					25					30		

Arg

<210> 26
<211> 1094
<212> DNA
<213> Zea mays

<400> 26

ccacgcgtcc gtcaaaggat acaaccatgt acacataatt gacttttccc tgatgcaagg 60
tctccagtgg ccggcactca tggatgtctt ctccgcccggt gagggtagggc caccaaagct 120
ccgaatcaca ggcattggcc cgaacccaat aggtggccgt gacgagctcc atgaagtggg 180
aattgcctc gccaaagtatg cacactcgggt gggatatcgac ttcactttcc agggagtctg 240
tgtcgatcaa cttgataggt tgtgcgactg gatgcttctc aaaccaatca aaggagaggc 300
agttgccata aactccatcc tacaactcca tcgcctcctc gttgaccag atgcaaacc 360
agtggtagcc gcaccaatag atatcctcct caaatgggtc atcaagataa accccatgat 420
cttcacggtg gttgagcatg aggcagatca caacagacca ccactactag agaggttcac 480
taatgcctc ttccactatg cgaccatggt tgactctttg gaggccatgc atcgttgtac 540
cagtgttaga gacatcaccc actcactcac agagggtgtac cttcgagggtg agatttttga 600
cattgtctgc ggcgagggca gtgcacgcac cgaacgtcat gagttgtttg gtcactggag 660
ggagaggctc acctatgctg ggctaactca agtgtgggtc gaccccgatg aggttgacac 720
gctaaaagac cagttgatcc atgtgacatc cttatctggc tctgggttca acatcctagt 780
gtgtgatggc agccttgac tagcgtggca taatcgccc ttatatgtgg caacagcttg 840

gtgtgtgaca ggaggaaatg ctgccagttc catggttggc aacatctgta aggggtacaaa 900
 tgatagtaga agaaaggaaa accgtaatgg acccatggag tagcaggaag aataaccatg 960
 tcatgagcaa atcgatcaag taataaaatg cactgatgac atgcatggtg atctaaagtt 1020
 tttttgcgtg aatgtgcaat gacgaattgt tcaatttgaa taacctaatac atgagactca 1080
 aaaaaaaaaa aaaa 1094

<210> 27
 <211> 314
 <212> PRT
 <213> Zea mays

<220>
 <221> SITE
 <222> 314
 <223> Xaa = STOP

<400> 27

His Ala Ser Val Lys Gly Tyr Asn His Val His Ile Ile Asp Phe Ser
 1 5 10 15
 Leu Met Gln Gly Leu Gln Trp Pro Ala Leu Met Asp Val Phe Ser Ala
 20 25 30
 Arg Glu Gly Gly Pro Pro Lys Leu Arg Ile Thr Gly Ile Gly Pro Asn
 35 40 45
 Pro Ile Gly Gly Arg Asp Glu Leu His Glu Val Gly Ile Arg Leu Ala
 50 55 60
 Lys Tyr Ala His Ser Val Gly Ile Asp Phe Thr Phe Gln Gly Val Cys
 65 70 75 80
 Val Asp Gln Leu Asp Arg Leu Cys Asp Trp Met Leu Leu Lys Pro Ile
 85 90 95
 Lys Gly Glu Ala Val Ala Ile Asn Ser Ile Leu Gln Leu His Arg Leu
 100 105 110
 Leu Val Asp Pro Asp Ala Asn Pro Val Val Pro Ala Pro Ile Asp Ile
 115 120 125
 Leu Leu Lys Leu Val Ile Lys Ile Asn Pro Met Ile Phe Thr Val Val
 130 135 140
 Glu His Glu Ala Asp His Asn Arg Pro Pro Leu Leu Glu Arg Phe Thr
 145 150 155 160
 Asn Ala Leu Phe His Tyr Ala Thr Met Phe Asp Ser Leu Glu Ala Met
 165 170 175
 His Arg Cys Thr Ser Gly Arg Asp Ile Thr Asp Ser Leu Thr Glu Val
 180 185 190

Tyr Leu Arg Gly Glu Ile Phe Asp Ile Val Cys Gly Glu Gly Ser Ala
 195 200 205
 Arg Thr Glu Arg His Glu Leu Phe Gly His Trp Arg Glu Arg Leu Thr
 210 215 220
 Tyr Ala Gly Leu Thr Gln Val Trp Phe Asp Pro Asp Glu Val Asp Thr
 225 230 235 240
 Leu Lys Asp Gln Leu Ile His Val Thr Ser Leu Ser Gly Ser Gly Phe
 245 250 255
 Asn Ile Leu Val Cys Asp Gly Ser Leu Ala Leu Ala Trp His Asn Arg
 260 265 270
 Pro Leu Tyr Val Ala Thr Ala Trp Cys Val Thr Gly Gly Asn Ala Ala
 275 280 285
 Ser Ser Met Val Gly Asn Ile Cys Lys Gly Thr Asn Asp Ser Arg Arg
 290 295 300
 Lys Glu Asn Arg Asn Gly Pro Met Glu Xaa
 305 310

<210> 28
 <211> 611
 <212> DNA
 <213> Oryza sativa

<400> 28

cccaacttgg gaagcccttc ctccgctccg cctcctacct caaggaggcc ctctcctcgc 60
 cactcgccga cagccaccat ggctcctccg gcgtcacctc gccgctcgac gttgccctca 120
 agcttgccagc atacaagtct ttctctgacc tgtcacctgt gctccagttc actaacttta 180
 ccgcaacaag gcgcttcttg atgagattgg tggcatggca acttcctgca tccatgtcat 240
 tgactttgat ctgggtgttg gtggctcagt ggcttccttc ttgcaggagc ttgcccaccg 300
 ccggggagct ggaggtatgg ccttgccggt gttgaagctc acggctttca tgtcgactgc 360
 ttctcaccat ccactggagc tgcaccttac ccaggataac ctctctcagt ttgccgcaga 420
 gctcagaatt cctttcgaat tcaatgccgt cagtcttgat gcattcaatc ctgcggaatc 480
 tattttcttc tctggtgatg aagttgttgc tgtagcctc cctgttggt gctctgctcg 540
 tgcaccaccg ctgccagcga ttcttcggtt ggtgaaacag ctttgtccta aggttgctgt 600
 ggctattgat c 611

<210> 29
 <211> 502
 <212> DNA
 <213> Oryza sativa

<400> 29

tttttttttt tttttttttt tttttttttt tacagagcaa cagcagtata atattaattc 60
 tgtaccacac aaccatttga taggttaaata taccctctag tctctactca taagcagtgt 120
 ttccaatgag atgatcatgg ctaattgagc agagcatggc aacaacctaa agcaacatca 180
 ttagctatag agactgacac caatattcct aaatccacta ggctagctaa taagctgcaa 240
 cgaaaagcaa tatgaagagt tcaacagctc aagacaacaa tttcatttgc aacatttaat 300
 tgcaagaata aatggacatt actggagtgg tcgatgcttg caaacggtgg tggaaccttg 360
 gtggagtga gcttatggct gatcagcacc gccaaagtga tatggataca agctccccac 420
 gctgccagta gagcgtaaga gcagctccgc gtttctccac atggaatcct cggacctgca 480
 cccgcttcag gaggcagtct gc 502

<210> 30
 <211> 298
 <212> PRT
 <213> Arabidopsis thaliana

<400> 30

Pro Gln Gln Gln Gln Gln His Gln Gln Gln Gln Gln Gln His Lys Pro
 1 5 10 15
 Pro Pro Pro Pro Ile Gln Gln Gln Glu Arg Glu Asn Ser Ser Thr Asp
 20 25 30
 Ala Pro Pro Gln Pro Glu Thr Val Thr Ala Thr Val Pro Ala Val Gln
 35 40 45
 Thr Asn Thr Ala Glu Ala Leu Arg Glu Arg Lys Glu Glu Ile Lys Arg
 50 55 60
 Gln Lys Gln Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu Gln
 65 70 75 80
 Cys Ala Glu Ala Val Ser Ala Asp Asn Leu Glu Glu Ala Asn Lys Leu
 85 90 95
 Leu Leu Glu Ile Ser Gln Leu Ser Thr Pro Tyr Gly Thr Ser Ala Gln
 100 105 110
 Arg Val Ala Ala Tyr Phe Ser Glu Ala Met Ser Ala Arg Leu Leu Asn
 115 120 125
 Ser Cys Leu Gly Ile Tyr Ala Ala Leu Pro Ser Arg Trp Met Pro Gln
 130 135 140
 Thr His Ser Leu Lys Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile
 145 150 155 160
 Ser Pro Leu Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln
 165 170 175
 Glu Ala Phe Glu Lys Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile
 180 185 190

Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg
195 200 205

Pro Gly Gly Pro Pro His Val Arg Leu Thr Gly Leu Gly Thr Ser Met
210 215 220

Glu Ala Leu Gln Ala Thr Gly Lys Arg Leu Ser Asp Phe Thr Asp Lys
225 230 235 240

Leu Gly Leu Pro Phe Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn
245 250 255

Asp Leu Thr Glu Arg Leu Asn Val Arg Lys Arg Glu Ala Ala Val His
260 265 270

Trp Leu Gln His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr
275 280 285

Leu Trp Leu Leu Gln Arg Leu Ala Pro Lys
290 295

<210> 31
<211> 307
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 307
<223> Xaa = STOP

<400> 31

Gly Thr Ser Pro Thr Gly Pro Glu Leu Leu Thr Tyr Met His Ile Leu
1 5 10 15

Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu Ser Ala Asn Gly
20 25 30

Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp
35 40 45

Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu
50 55 60

Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile Asp
65 70 75 80

Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu Glu Leu Val Gly
85 90 95

Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val Pro Phe Glu Phe
100 105 110

His Gly Ala Ala Leu Cys Cys Thr Glu Val Glu Ile Glu Lys Leu Gly
115 120 125

Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro Leu Val Leu His
130 135 140

His Met Pro Asp Glu Ser Val Thr Val Glu Asn His Arg Asp Arg Leu
 145 150 155 160
 Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val Thr Leu Val Glu
 165 170 175
 Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro Arg Phe Val Glu
 180 185 190
 Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile Asp Val Lys Leu
 195 200 205
 Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln His Cys Leu Ala
 210 215 220
 Arg Glu Val Val Asn Leu Ile Ala Cys Glu Gly Val Glu Arg Glu Glu
 225 230 235 240
 Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe His Met Ala Gly
 245 250 255
 Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala Thr Ile Lys Gly
 260 265 270
 Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu Glu Arg Asp Gly
 275 280 285
 Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile Thr Ser Cys Ala
 290 295 300
 Trp Arg Xaa
 305

<210> 32
 <211> 353
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <221> SITE
 <222> 353
 <223> Xaa = STOP

<400> 32

Leu Ser Met Val Asn Glu Leu Arg Gln Ile Val Ser Ile Gln Gly Asp
 1 5 10 15
 Pro Ser Gln Arg Ile Ala Ala Tyr Met Val Glu Gly Leu Ala Ala Arg
 20 25 30
 Met Ala Ala Ser Gly Lys Phe Ile Tyr Arg Ala Leu Lys Cys Lys Glu
 35 40 45
 Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
 50 55 60
 Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
 65 70 75 80
 Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
 85 90 95

Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
 100 105 110
 Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
 115 120 125
 Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Gly Leu Arg Leu
 130 135 140
 Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
 145 150 155 160
 Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
 165 170 175
 Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
 180 185 190
 Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
 195 200 205
 Val Lys Ser Leu Asn Pro Lys Leu Val Thr Val Val Glu Gln Asp Val
 210 215 220
 Asn Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu
 225 230 235 240
 Tyr Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu
 245 250 255
 Ser Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile
 260 265 270
 Val Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu
 275 280 285
 Ala Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro
 290 295 300
 Lys Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys
 305 310 315 320
 Gln Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu
 325 330 335
 His Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
 340 345 350

Xaa

<210> 33
 <211> 326
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <221> SITE
 <222> 326
 <223> Xaa = STOP

<400> 33

Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
1 5 10 15
Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
20 25 30
Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
35 40 45
Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
50 55 60
Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65 70 75 80
Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
85 90 95
Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
100 105 110
Arg Lys Asn Cys Ala Leu Arg Phe Gln Asn Asn Pro Ser Gly Val Asp
115 120 125
Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
130 135 140
Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145 150 155 160
Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
165 170 175
Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
180 185 190
Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
195 200 205
Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
210 215 220
Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
225 230 235 240
Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
245 250 255
His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
260 265 270
Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
275 280 285
Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
290 295 300
Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
305 310 315 320

Trp Arg Cys Arg Lys Xaa
325

<210> 34
<211> 588
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 134, 144, 430, 450, 452, 467, 477, 484, 495, 499
<223> Xaa = Any amino acid

<220>
<221> SITE
<222> 444, 588
<223> Xaa = STOP

<400> 34
Pro Met Lys Arg Asp His His Gln Phe Gln Gly Arg Leu Ser Asn His
1 5 10 15
Gly Thr Ser Ser Ser Ser Ser Ser Ile Ser Lys Asp Lys Met Met Met
20 25 30
Val Lys Lys Glu Glu Asp Gly Gly Gly Asn Met Asp Asp Glu Leu Leu
35 40 45
Ala Val Leu Gly Tyr Lys Val Arg Ser Ser Glu Met Ala Glu Val Ala
50 55 60
Leu Lys Leu Glu Gln Leu Glu Thr Met Met Ser Asn Ala Gln Glu Asp
65 70 75 80
Gly Leu Ser His Leu Ala Thr Asp Ala Ala His Tyr Asn Pro Ser Glu
85 90 95
Leu Tyr Ser Trp Leu Asp Met Asn Leu Ser Glu Leu Asn Pro Pro Pro
100 105 110
Leu Pro Ala Ser Ser Asn Gly Leu Asp Pro Val Leu Pro Ser Pro Glu
115 120 125
Ile Cys Gly Phe Pro Xaa Ser Asp Tyr Asp Leu Lys Val Ile Pro Xaa
130 135 140
Asn Ala Ile Tyr Gln Phe Pro Ala Ile Asp Ser Ser Ser Ser Asn Asn
145 150 155 160
Gln Asn Lys Arg Leu Lys Ser Cys Ser Ser Pro Asp Ser Met Val Thr
165 170 175
Ser Thr Ser Thr Gly Thr Gln Ile Gly Gly Val Ile Gly Thr Thr Val
180 185 190
Thr Thr Thr Thr Thr Thr Thr Thr Ala Ala Ala Glu Ser Thr Arg Ser
195 200 205
Val Ile Leu Val Asp Ser Gln Glu Asn Gly Val Arg Leu Val His Ala
210 215 220
Leu Met Ala Cys Ala Glu Ala Ile Gln Gln Asn Asn Leu Thr Leu Ala
225 230 235 240
Glu Ala Leu Val Lys Gln Ile Gly Cys Leu Ala Val Ser Gln Ala Gly
245 250 255
Ala Met Arg Lys Val Ala Thr Tyr Phe Ala Glu Ala Leu Ala Arg Arg
260 265 270
Ile Tyr Arg Leu Ser Pro Pro Gln Asn Gln Ile Asp His Cys Leu Ser
275 280 285
Asp Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro Tyr Leu Lys Phe
290 295 300
Ala His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala Phe Glu Gly Lys
305 310 315 320
Lys Arg Val His Val Ile Asp Phe Ser Met Asn Gln Gly Leu Gln Trp
325 330 335

Pro Ala Leu Met Gln Ala Leu Ala Leu Arg Glu Gly Gly Pro Pro Thr
 340 345 350
 Phe Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp Asn Ser Asp His
 355 360 365
 Leu His Glu Val Gly Cys Lys Leu Ala Gln Leu Ala Glu Ala Ile His
 370 375 380
 Val Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Ser Leu Ala Asp Leu
 385 390 395 400
 Asp Ala Ser Met Leu Glu Leu Arg Pro Ser Asp Thr Glu Ala Val Ala
 405 410 415
 Val Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly Arg Xaa Gly Gly
 420 425 430
 Ile Glu Lys Val Leu Gly Val Val Lys Gln Asp Xaa Thr Gly Asp Phe
 435 440 445
 His Xaa Trp Xaa Arg Gln Glu Pro Asn His Asn Gly Pro Gly Phe Leu
 450 455 460
 Asp Gly Xaa Thr Glu Ser Leu His Thr Thr Ser Thr Xaa Phe Asp Ser
 465 470 475 480
 Leu Glu Gly Xaa Pro Asn Ser Gln Asp Lys Leu Met Ser Glu Xaa Tyr
 485 490 495
 Leu Gly Xaa Gln Ile Cys Asn Leu Val Ala Cys Glu Gly Pro Asp Arg
 500 505 510
 Val Glu Arg His Glu Thr Leu Ser Gln Trp Gly Asn Arg Phe Gly Ser
 515 520 525
 Ser Gly Leu Ala Pro Ala His Leu Gly Ser Asn Ala Phe Lys Gln Ala
 530 535 540
 Ser Met Leu Leu Ser Val Phe Asn Ser Gly Gln Tyr Arg Val Glu Glu
 545 550 555 560
 Ser Asn Gly Cys Leu Met Leu Gly Trp His Thr Arg Pro Leu Ile Thr
 565 570 575
 Thr Ser Ala Trp Lys Leu Ser Thr Ala Ala His Xaa
 580 585

<210> 35
 <211> 524
 <212> PRT
 <213> Arabidopsis thaliana

<400> 35
 Met Lys Arg Asp His His His His His Gln Asp Lys Lys Thr Met Met
 1 5 10 15
 Met Asn Glu Glu Asp Asp Gly Asn Gly Met Asp Glu Leu Leu Ala Val
 20 25 30
 Leu Gly Tyr Lys Val Arg Ser Ser Glu Met Ala Asp Val Ala Gln Lys
 35 40 45
 Leu Glu Val Met Met Ser Asn Val Gln Glu Asp Asp Leu Ser Leu Ala
 50 55 60
 Thr Glu Thr Val His Tyr Asn Pro Ala Glu Leu Trp Leu Asp Ser Met
 65 70 75 80
 Leu Thr Asp Leu Asn Pro Pro Ser Ser Asn Ala Glu Tyr Asp Leu Lys
 85 90 95
 Ala Ile Pro Gly Asp Ile Leu Asn Gln Phe Ala Ile Asp Ser Ala Ser
 100 105 110
 Ser Ser Asn Gln Gly Gly Gly Gly Asp Thr Tyr Thr Thr Asn Lys Arg
 115 120 125
 Leu Lys Cys Ser Asn Gly Val Val Glu Thr Thr Thr Ala Thr Ala Glu
 130 135 140
 Ser Thr Arg His Val Val Leu Val Asp Ser Gln Glu Asn Gly Val Arg
 145 150 155 160
 Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val Gln Lys Glu Asn
 165 170 175

Leu Thr Val Ala Glu Ala Leu Val Lys Gln Ile Gly Phe Leu Ala Val
 180 185 190
 Ser Gln Ile Gly Ala Met Arg Gln Val Ala Thr Tyr Phe Ala Glu Ala
 195 200 205
 Leu Ala Arg Arg Ile Tyr Arg Leu Ser Pro Ser Gln Ser Pro Ile Asp
 210 215 220
 His Ser Leu Ser Asp Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro
 225 230 235 240
 Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala
 245 250 255
 Phe Gln Gly Lys Lys Arg Val His Val Ile Asp Phe Ser Met Ser Gln
 260 265 270
 Gly Leu Gln Trp Pro Ala Leu Met Gln Ala Leu Ala Leu Arg Pro Gly
 275 280 285
 Gly Pro Pro Val Phe Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp
 290 295 300
 Asn Phe Asp Tyr Leu His Glu Val Gly Cys Lys Leu Ala His Leu Ala
 305 310 315 320
 Glu Ala Ile His Val Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Thr
 325 330 335
 Leu Ala Asp Leu Asp Ala Ser Met Leu Glu Leu Arg Pro Ser Glu Ile
 340 345 350
 Glu Ser Val Ala Val Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly
 355 360 365
 Arg Pro Gly Ala Ile Asp Lys Val Leu Gly Val Val Asn Gln Ile Lys
 370 375 380
 Pro Glu Ile Phe Thr Val Glu Gln Glu Ser Asn His Asn Ser Pro
 385 390 395 400
 Ile Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr Tyr Ser Thr Leu
 405 410 415
 Phe Asp Ser Leu Gly Val Pro Asn Ser Gln Asp Lys Val Met Ser Glu
 420 425 430
 Val Tyr Leu Gly Lys Gln Ile Cys Asn Val Val Ala Cys Asp Gly Pro
 435 440 445
 Asp Arg Val Glu Arg His Glu Thr Leu Ser Gln Trp Arg Asn Arg Phe
 450 455 460
 Gly Ser Ala Gly Phe Ala Ala Ala His Ile Gly Ser Asn Ala Phe Lys
 465 470 475 480
 Gln Ala Ser Met Leu Leu Ala Leu Phe Asn Gly Gly Glu Gly Tyr Arg
 485 490 495
 Val Glu Glu Ser Asp Gly Cys Leu Met Leu Gly Trp His Thr Arg Pro
 500 505 510
 Leu Ile Ala Thr Ser Ala Trp Lys Leu Ser Thr Asn
 515 520

<210> 36
 <211> 310
 <212> PRT
 <213> Oryza sativa

<220>
 <221> SITE
 <222> 310
 <223> Xaa = STOP

<400> 36
 Gln Leu Gly Lys Pro Phe Leu Arg Ser Ala Ser Tyr Leu Lys Glu Ala
 1 5 10 15
 Leu Leu Leu Ala Leu Ala Asp Ser His His Gly Ser Ser Gly Val Thr
 20 25 30

Ser Pro Leu Asp Val Ala Leu Lys Leu Ala Ala Tyr Lys Ser Phe Ser
 35 40 45
 Asp Leu Ser Pro Val Leu Gln Phe Thr Asn Phe Thr Ala Asn Lys Ala
 50 55 60
 Leu Leu Asp Glu Ile Gly Gly Met Ala Thr Ser Cys Ile His Val Ile
 65 70 75 80
 Asp Phe Asn Leu Gly Val Gly Gly Gln Trp Ala Ser Phe Leu Gln Glu
 85 90 95
 Leu Ala His Arg Arg Gly Ala Gly Gly Met Ala Leu Pro Leu Lys
 100 105 110
 Leu Thr Ala Phe Met Ser Thr Ala Ser His His Pro Leu Glu Leu His
 115 120 125
 Leu Thr Gln Asp Asn Leu Ser Gln Phe Ala Ala Glu Leu Arg Ile Pro
 130 135 140
 Phe Glu Phe Asn Ala Val Ser Leu Asp Ala Phe Asn Pro Ala Glu Ser
 145 150 155 160
 Ile Ser Ser Ser Gly Asp Glu Val Val Ala Val Ser Leu Pro Val Gly
 165 170 175
 Cys Ser Ala Arg Ala Pro Pro Leu Pro Ala Asp His Gly Gly Asp Arg
 180 185 190
 Ala Asp Leu Pro Phe Ser Gln His Phe Leu Asn Cys Phe Gln Ser Cys
 195 200 205
 Val Phe Leu Asp Ala Ala Gly Ile Asp Ala Asp Ser Ala Cys Lys Ile
 210 215 220
 Glu Arg Phe Leu Ile Gln Pro Arg Val Glu Asp Ala Val Ile Gly Arg
 225 230 235 240
 His Lys Ala Gln Lys Ala Ile Ala Trp Arg Ser Val Phe Ala Ala Thr
 245 250 255
 Gly Phe Lys Pro Val Gln Leu Ser Asn Leu Ala Glu Ala Gln Ala Asp
 260 265 270
 Cys Leu Leu Lys Arg Val Gln Val Arg Gly Phe His Val Glu Lys Arg
 275 280 285
 Gly Ala Ala Leu Thr Leu Tyr Trp Gln Arg Gly Glu Leu Val Ser Ile
 290 295 300
 Ser Ser Trp Arg Cys Xaa
 305 310

<210> 37
 <211> 313
 <212> PRT
 <213> Zea mays

<220>
 <221> SITE
 <222> 313
 <223> Xaa = STOP

<400> 37
 His Ala Ser Val Lys Gly Tyr Asn His Val His Ile Ile Asp Phe Ser
 1 5 10 15
 Leu Met Gln Gly Leu Gln Trp Pro Ala Leu Met Asp Val Phe Ser Ala
 20 25 30
 Arg Glu Gly Gly Pro Pro Lys Leu Arg Ile Thr Gly Ile Gly Pro Asn
 35 40 45
 Pro Ile Gly Gly Arg Asp Glu Leu His Glu Val Gly Ile Arg Leu Ala
 50 55 60
 Lys Tyr Ala His Ser Val Gly Ile Asp Phe Thr Phe Gln Gly Val Cys
 65 70 75 80
 Val Asp Gln Leu Asp Arg Leu Cys Asp Trp Met Leu Leu Lys Pro Ile
 85 90 95
 Lys Gly Glu Ala Val Ala Ile Asn Ser Ile Leu Gln Leu His Arg Leu
 100 105 110

Leu Val Asp Pro Asp Ala Asn Pro Val Val Pro Ala Pro Ile Asp Ile
 115 120 125
 Leu Leu Lys Val Ile Lys Ile Asn Pro Met Ile Phe Thr Val Val Glu
 130 135 140
 His Glu Ala Asp His Asn Arg Pro Pro Leu Leu Glu Arg Phe Thr Asn
 145 150 155 160
 Ala Leu Phe His Tyr Ala Thr Met Phe Asp Ser Leu Glu Ala Met His
 165 170 175
 Arg Cys Thr Ser Gly Arg Asp Ile Thr Asp Ser Leu Thr Glu Val Tyr
 180 185 190
 Leu Arg Gly Glu Ile Phe Asp Ile Val Cys Gly Glu Gly Ser Ala Arg
 195 200 205
 Thr Glu Arg His Glu Leu Phe Gly His Trp Arg Glu Arg Leu Thr Tyr
 210 215 220
 Ala Gly Leu Thr Gln Val Trp Phe Asp Pro Asp Glu Val Asp Thr Leu
 225 230 235 240
 Lys Asp Gln Leu Ile His Val Thr Ser Leu Ser Gly Ser Gly Phe Asn
 245 250 255
 Ile Leu Val Cys Asp Gly Ser Leu Ala Leu Ala Trp His Asn Arg Pro
 260 265 270
 Leu Tyr Val Ala Thr Ala Trp Cys Val Thr Gly Gly Asn Ala Ala Ser
 275 280 285
 Ser Met Val Gly Asn Ile Cys Lys Gly Thr Asn Asp Ser Arg Arg Lys
 290 295 300
 Glu Asn Arg Asn Gly Pro Met Glu Xaa
 305 310

<210> 38
 <211> 33
 <212> PRT
 <213> Zea mays

<400> 38

Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp
 1 5 10 15

Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser
 20 25 30

Arg

<210> 39
 <211> 29
 <212> PRT
 <213> Zea mays

<220>
 <221> SITE
 <222> 1...29
 <223> Xaa=unknown amino acid

<400> 39

Phe Ala Gly Cys Arg Arg Val His Val Val Asp Phe Gly Ile Lys Gln
 1 5 10 15

Gly Met Gln Trp Pro Ala Leu Leu Xaa Asp Leu Ala Leu
 20 25

<210> 40
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> 1...73
<223> Xaa=unknown amino acid

<400> 40

Gly Arg Asn Gly Arg Thr Leu Trp Leu Gly Glu Gly His Ile Asp Leu
1 5 10 15
Trp Pro Leu Gln Gly Leu Leu Ser Gln Gly Leu Gln Arg Ala Leu Cys
20 25 30
Ala Arg Pro Leu Gly Ala Pro His Val Phe Leu Pro Gly Leu His Thr
35 40 45
Leu Ser Leu Gly Leu Gln Xaa Arg His Leu Leu Val His Met Met Ala
50 55 60
Leu Ser Tyr Ser Tyr Gly Arg Xaa Pro
65 70

<210> 41
<211> 59
<212> PRT
<213> Arabidopsis thaliana

<400> 41

Thr Ser Asp Ser Ala Ser Ser Phe Asn Ile Pro Thr Ser Ala Gln Asn
1 5 10 15
His Tyr Ala Thr Gly Ser Phe Ser Thr Asn Ser Arg Thr Thr Asn Val
20 25 30
Ala Thr Ala Thr Thr Asn Ser Ala Thr Ala His Trp Val Ala Thr Asp
35 40 45
Ala Glu His Thr Asp Thr Ile Ile Ala Gln Pro
50 55

<210> 42
<211> 110
<212> PRT
<213> Brassica napus

<220>
<221> SITE
<222> 1...110
<223> Xaa=unknown amino acid

<400> 42

Arg Xaa Phe Asp Ser Leu Glu His Asp Ala Ser Lys Gly Glu Pro Arg
 1 5 10 15
 Glu Asp Glu Arg Gly Arg Xaa Cys Leu Ala Arg Asn Ile Val Asn Ile
 20 25 30
 Val Xaa Cys Lys Xaa Glu Glu Arg Ile Glu Arg Tyr Glu Val Thr Gly
 35 40 45
 Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Ser Pro Arg Pro Met
 50 55 60
 Ser Gly Arg Val Thr Ser Asn Ile Glu Ser Leu Ile Lys Arg Asp Tyr
 65 70 75 80
 Cys Ser Lys Tyr Lys Val Lys Glu Glu Met Gly Glu Leu His Phe Ser
 85 90 95
 Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Ser Xaa
 100 105 110

<210> 43
 <211> 137
 <212> PRT
 <213> Oryza sativa

<220>
 <221> SITE
 <222> 1...137
 <223> Xaa=unknown amino acid

<400> 43

Asn Gly Ser Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg Glu Ala
 1 5 10 15
 Leu Phe His Tyr Ser Ala Ile Phe Asp Met Leu Glu Thr Asn Ile Pro
 20 25 30
 Lys Asp Asn Glu Gln Arg Leu Leu Ile Glu Ser Ala Leu Phe Ser Arg
 35 40 45
 Glu Xaa Asn Val Ile Ser Cys Glu Gly Leu Glu Arg Met Glu Arg Pro
 50 55 60
 Glu Thr Tyr Lys Gln Trp Gln Val Arg Asn Gln Arg Val Gly Phe Lys
 65 70 75 80
 Gln Leu Pro Leu Asn Gln Asp Met Met Lys Arg Ala Arg Xaa Glu Gly
 85 90 95
 Gln Val Leu Pro Thr Arg Thr Phe Ile Ile Asp Glu Asp Asn Arg Trp
 100 105 110
 Leu Leu Gln Gly Trp Lys Gly Arg Ile Leu Phe Ala Leu Ser Thr Trp
 115 120 125
 Lys Pro Asp Asn Arg Ser Ser Ser Xaa
 130 135

<210> 44
 <211> 41
 <212> PRT
 <213> Oryza sativa

<400> 44

Asn	Gly	Gly	Ala	Phe	Ala	Pro	Ser	Thr	Trp	Thr	Ala	Arg	Ser	Leu	Asn
1				5					10					15	
Gly	Gly	Ala	Phe	Ala	Pro	Ser	Thr	Trp	Thr	Ala	Arg	Ser	Leu	Pro	Val
			20					25					30		
Pro	Ser	Ser	Pro	Ser	Thr	Asp	Ser	Phe							
			35				40								

<210> 45
 <211> 1279
 <212> DNA
 <213> Arabidopsis thaliana

<400> 45

gcggctatct tctacggcca ccaccaccat acacctccgc cggcaaagcg gctcaaccct 60
 ggtcccgtag ggataacaga gcagctgggt aaggcagcag aggtcataga gagcgacacg 120
 tgtctagctc aggggatatt ggcgcggtc aatcaacagc tctcttctcc cgtcgggaag 180
 ccattagaaa gagcagcttt ttacttcaaa gaagctctca ataatctcct tcacaacgctc 240
 tcccaaacc taaaccctta ttccctcatc ttcaagatcg ctgcttaca atccttctca 300
 gagatctctc ccgttcttca gttcgccaac ttacctcca accaagccct cttagagtcc 360
 ttccatgggt tccaccgtct ccacatcatc gacttcgata tcggctacgg tggccaatgg 420
 gcttccctca tgcaagagct tgttctccgc gacaacgccg ctctctctc cctcaagatc 480
 accgttttgc cttctccggc gaaccacgac cagctcgaac ttggcttcac tcaagacaac 540
 ctcaagcact tcgcctctga gatcaacatc tcccttgaca tccaagtttt gagcttagac 600
 ctctcgggt ccatctcgtg gcctaactcg tcggagaaag aagctgtcgc cgtaaacatc 660
 tccgcgcgt ccttctcgca cctccctttg gtccctccgt tcgtgaagca tctatctccg 720
 acgatcatcg tctgctccga cagaggatgc gagaggacgg atctgccctt ctctcaacag 780
 ctcgcccaact cgctgcactc acacaccgct ctcttcgaat ccctcgacgc cgtcaacgcc 840
 aacctcgacg caatgcagaa gatcgagagg tttcttatac agccggagat agagaagctg 900
 gtgttgatc gtagccgtcc gatagaaagg ccgatgatga cgtggcaagc gatgtttcta 960
 cagatgggtt tctcaccggt gacgcacagt aacttcacgg agtctcaagc cgagtgttta 1020
 gtccaacgga cgccagtgag aggctttcac gtcgagaaga aacataactc acttctccta 1080
 tggttgcaaa ggacagaact cgtcggagtt tcagcatgga gatgtcgtc ctctgattt 1140

ccaccggagt ttcaattatt aaaaaaatat tttccttaat tcaatttatc ttaaatgaca 1200
aatttttagt ttctgatttt attttgctca gtgcgatgga tttttaaatt taagtttcac 1260
acaaatatat aaatttttg 1279

<210> 46
<211> 379
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...379
<223> Xaa = STOP

<400> 46

Ala Ala Ile Phe Tyr Gly His His His His Thr Pro Pro Pro Ala Lys
1 5 10 15
Arg Leu Asn Pro Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala
20 25 30
Ala Glu Val Ile Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala
35 40 45
Arg Leu Asn Gln Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg
50 55 60
Ala Ala Phe Tyr Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val
65 70 75 80
Ser Gln Thr Leu Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr
85 90 95
Lys Ser Phe Ser Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr
100 105 110
Ser Asn Gln Ala Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His
115 120 125
Ile Ile Asp Phe Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met
130 135 140
Gln Glu Leu Val Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile
145 150 155 160
Thr Val Phe Ala Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe
165 170 175
Thr Gln Asp Asn Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu
180 185 190
Asp Ile Gln Val Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro
195 200 205
Asn Ser Ser Glu Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser
210 215 220

Phe Ser His Leu Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro
 225 230 235 240
 Thr Ile Ile Val Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro
 245 250 255
 Phe Ser Gln Gln Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe
 260 265 270
 Glu Ser Leu Asp Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile
 275 280 285
 Glu Arg Phe Leu Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg
 290 295 300
 Ser Arg Pro Ile Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu
 305 310 315 320
 Gln Met Gly Phe Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln
 325 330 335
 Ala Glu Cys Leu Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu
 340 345 350
 Lys Lys His Asn Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val
 355 360 365
 Gly Val Ser Ala Trp Arg Cys Arg Ser Ser Xaa
 370 375

<210> 47
 <211> 745
 <212> DNA
 <213> Arabidopsis thaliana

<400> 47

tgcatacaac gcaccgtttt togtaacacg gtttcgcgaa gctctatttc atttctcctc 60
 gatttttgac atgcttgaga caattgtgcc acgagaagac gaagagagga tgttcoctga 120
 gatggaggtc tttgggagag aggcactgaa tgtgattgct tgcgaagggt gggaaagagt 180
 ggagaggcct gagacataca agcagtggca cgtacgggct atgaggtcag ggttggtgca 240
 ggttccattt gacccaagca ttatgaagac atcgctgcat aagggtccaca cattctacca 300
 caaggatttt gtgatcgatc aagataaccg gtggctcttg caaggctgga agggaagaac 360
 tgtcatggct ctttctgttt ggaaaccaga gtccaaggct tgaccgagaa atcctcgttg 420
 gcatatgaga gaccatctct tgattttctt cctgtgtaat tcccagagac agaattacag 480
 atgtaagaag agaatgctgc acaaagaact tgttcaaaga taatattgat gtaagtcttg 540
 ttttataact ttctagctgt gtttttgttg tttctcagct agattctcct aacggtatct 600
 ttgtagctag ggtgatcaga ttgtttgtat attgctagca gagttagttt gtctagattg 660
 taacacatat aagaggaagc ttagagtttc tatggtttaa agagaagttt tttccttctc 720

caatgtaaaa aaaaaaaaaa aaaaa

745

<210> 48
<211> 134
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 134
<223> Xaa = STOP

<400> 48

Ala Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg Glu Ala Leu Phe
1 5 10 15
His Phe Ser Ser Ile Phe Asp Met Leu Glu Thr Ile Val Pro Arg Glu
20 25 30
Asp Glu Glu Arg Met Phe Leu Glu Met Glu Val Phe Gly Arg Glu Ala
35 40 45
Leu Asn Val Ile Ala Cys Glu Gly Trp Glu Arg Val Glu Arg Pro Glu
50 55 60
Thr Tyr Lys Gln Trp His Val Arg Ala Met Arg Ser Gly Leu Val Gln
65 70 75 80
Val Pro Phe Asp Pro Ser Ile Met Lys Thr Ser Leu His Lys Val His
85 90 95
Thr Phe Tyr His Lys Asp Phe Val Ile Asp Gln Asp Asn Arg Trp Leu
100 105 110
Leu Gln Gly Trp Lys Gly Arg Thr Val Met Ala Leu Ser Val Trp Lys
115 120 125
Pro Glu Ser Lys Ala Xaa
130

<210> 49
<211> 775
<212> DNA
<213> Arabidopsis thaliana

<400> 49

aaaaaatggg aaaccatcac tcttgatgaa cttatgatca atccaggaga gacaacgggc 60
gtcaactgca ttcacggtt acaatacact cctgatgaaa ctgtgtcatt agactctcca 120
agagacacgg ttctgaagct attcagagat atcaatcctg acctctttgt gtttgcagag 180
attaacggaa tgtacaactc tcctttcttc atgacgaggt tccgagaagc gctttttcat 240
tactcttcac tctttgacat gtttgacacc acaatacacg cagaggatga gtacaaaaac 300

aggtcactgt tggagagaga gttacttgtg agagacgcga tgagcgtgat ttcctgag 360
 ggtgcagagc ggtttgagag gcctgaaacc tacaagcaat ggcgagttag gattttgaga 420
 gccgggttta agccagcaac tattagcaaa cagatcatga aggaggctaa ggaaattgtg 480
 aggaaacggt accatagaga ttttgtgata gatagcgata acaattggat gcttcaagga 540
 tggaaaggaa gagtcatcta tgctttttct tgctggaaac ctgctgagaa gttcaciaaac 600
 aataatttaa acatctgaaa aatgttactt ctcaattaca tcatttttgt ttcccaatgg 660
 tttttagaaa tatgtttgat ccgtgagtg gatgcaactc ttttttcctg caagtacata 720
 ttgtattcaa atccttgttg aaatgataaa ttgtttaatc aaaaaaaaaa aaaaa 775

<210> 50
 <211> 206
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <221> SITE
 <222> 206
 <223> Xaa = STOP

<400> 50

Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
 1 5 10 15
 Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp
 20 25 30
 Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
 35 40 45
 Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
 50 55 60
 Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
 65 70 75 80
 Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Ala Glu Asp
 85 90 95
 Glu Tyr Lys Asn Arg Ser Leu Leu Glu Arg Glu Leu Leu Val Arg Asp
 100 105 110
 Ala Met Ser Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
 115 120 125
 Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
 130 135 140
 Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
 145 150 155 160
 Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
 165 170 175

Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
 180 185 190

Lys Pro Ala Glu Lys Phe Thr Asn Asn Leu Asn Ile Xaa
 195 200 205

<210> 51
 <211> 548
 <212> DNA
 <213> Arabidopsis thaliana

<400> 51

aatcgcttga accgaatttg gatcgagatt cgaaagaaag gctgagagtg gagagagtgc 60
 tgttcggttag gaggattatg gatttgggtcc gatcagatga tgataataat aaaccgggaa 120
 cccggtttgg gttaatggag gagaaagaac aatggagagt gttgatggag aaagctggat 180
 ttgagccggt taaaccgagt aattacgcgg ttagccaagc gaagctgcta ctatggaact 240
 acaattatag tacattgtat tcaattgttg aatcggagcc aggtttcatc tccttggctt 300
 ggaacaatgt gcctctcctc accgtttcct cttggcggtg actacttggt ccgataagtt 360
 aatctagtat tttgagttag cttttagaat tgaattgttt ggggttagat ttggatgttt 420
 aattagtctc tagcctattc tcttactctt ttttgtctag tgcttggagt gatgatgggt 480
 tgtcgtttat gttcatttgt aatatatatt gtatgtaaca tttgactaaa aaaaaaaaaa 540
 aaaaaaaaaa 548

<210> 52
 <211> 113
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <221> SITE
 <222> 113
 <223> Xaa = STOP

<400> 52

Ser Leu Glu Pro Asn Leu Asp Arg Asp Ser Lys Glu Arg Leu Arg Val
 1 5 10 15
 Glu Arg Val Leu Phe Gly Arg Arg Ile Met Asp Leu Val Arg Ser Asp
 20 25 30
 Asp Asp Asn Asn Lys Pro Gly Thr Arg Phe Gly Leu Met Glu Glu Lys
 35 40 45
 Glu Gln Trp Arg Val Leu Met Glu Lys Ala Gly Phe Glu Pro Val Lys
 50 55 60

Pro Ser Asn Tyr Ala Val Ser Gln Ala Lys Leu Leu Leu Trp Asn Tyr
65 70 75 80

Asn Tyr Ser Thr Leu Tyr Ser Leu Val Glu Ser Glu Pro Gly Phe Ile
85 90 95

Ser Leu Ala Trp Asn Asn Val Pro Leu Leu Thr Val Ser Ser Trp Arg
100 105 110

Xaa

<210> 53
<211> 1093
<212> DNA
<213> Arabidopsis thaliana

<400> 53

gcgaatgttg agatcttggg agcaatagct ggggaaacca gaggccacat tatcgatttt 60
cagattgcac agggatcaca atacatgttt ttgattcagg agcttgcgaa acgcccctggg 120
gggccgccgt tgctgcgtgt gacgggtgtg gatgattcac agtccaccta tgctcgtggg 180
ggaggactca gcttggtagg tgagaggctt gcaactttgg cgcagtcatt tgggtgtccc 240
tttgagtttc acgatgccat catgtctggg tgcaagggtc agcgggaaca tctcgggttg 300
gaacctgggt ttgctgttgt tgtgaacttc ccatatgtat tacaccacat gccagacgag 360
agcgtaagtg ttgaaaaata cagagacagg ctgctgcatt tgatcaagag cctctcccca 420
aaactgggta ctctagtaga gcaagaatcc aacacaaaca cctcgccatt ggtgtcacgg 480
tttgtggaaa cactggatta ctacacagcg atgtttgagt cgatagatgc agcacggcca 540
cgggatgata agcagagaat cagcgcagaa caacactgtg tagcaagaga catagtgaac 600
atgatagcat gtgaggagtc agagagagta gagagacacg aggtactggg gaaatggagg 660
gtcagaatga tgatggctgg gttcacgggt tggccgggtc gcacatctgc agcgtttgca 720
gcgagtgaga tgctgaaagc ttatgacaaa aactacaaac tgggaggcca tgaaggagcg 780
ctctacctct tctggaagag acgacccatg gctacatgtt ccgtgtggaa gccaaacca 840
aactatattg ggtaagttat agtgatgatg gttacttgag tggataaaga agagcacaac 900
aaaaacacat ctgtcgtgtt aaatttttta ggatgtgcaa tgatgtttta agttgtaaca 960
caacctaatg tatatatgta tacaaccaa acctgggtgg ttgttttctc ttgtaaattg 1020
tcatgtggtt gtgggtggga agctagtaat gaaatataac caaacattg attaggtcaa 1080
aaaaaaaaaaa aaa 1093

<210> 54
<211> 285

<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 285
<223> Xaa = STOP

<400> 54

Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
1 5 10 15
Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
20 25 30
Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
35 40 45
Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
50 55 60
Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
65 70 75 80
Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
85 90 95
His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
100 105 110
Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
115 120 125
Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
130 135 140
Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
145 150 155 160
Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
165 170 175
Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
180 185 190
Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
195 200 205
Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
210 215 220
Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
225 230 235 240
Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
245 250 255
His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
260 265 270

Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly Xaa
 275 280 285

<210> 55
 <211> 1928
 <212> DNA
 <213> Arabidopsis thaliana

<400> 55

aaagacttta gcagattttc aagcgggtca gaacatcaac aacaacaaca acaacaaccg 60
 ttttatagtc aagcagctct caacgctttt ctttcaaggt ctgtgaagcc tcgaaattat 120
 cagaattttc aatctccgtc ggccgatgat tgatctcacg tcggtgaatg atatgagttt 180
 gtttggtggt tctggttcat ctacagctta cggtttaccg gttcccaggt ctacagacgca 240
 acagcaacaa tcggattacg gtttatttgg tgggatccga atgggaatcg ggtcgggtat 300
 taataattat ccaacattaa ccggcggttc gtgtattgaa ccggttcaaa accgggttca 360
 tgaatcggag aacatggtga atagtttaag agagcttgag aaacagcttt tagatgatga 420
 cgatgagagt ggtggtgatg atgacgtgtc agttataaca aattcaaatt ccgattggat 480
 tcaaaatctc gtgactcga acccgaaccc gaaccgggtt ttgtcttttt caccgagctc 540
 ttctttcttcg tcttcttcgc cttctacagc ttcgacgacg acatcgggtat gttctaggca 600
 aacggttatg gaaatcgca cggcgatcgc ggaagggaaa acagagatag cgacggagat 660
 tttggcgcgt gtttctcaaa cgcctaattc tgagaggaat tcagaggaga agcttggtga 720
 tttcatggtg gctgcgcttc gatcgaggat agcttctcca gtgacggaat tgtatgggaa 780
 ggagcattta atctcgactc aattgctcta cgagctctct ccttgtttca aactcggttt 840
 cgaggccgcg aatctcgcca ttctcgacgc cgccgataac aacgacggtg gaatgatgat 900
 accgcacggt atcgatttct atatcggaga aggtggacaa tacgttaacc ttctccgtac 960
 attatccacg cgccggaatg gtaaaagtca gagtcagaat tctccggtgg ttaagatcac 1020
 cgccgtggcg aacaacgttt acggatgttt agtcgatgac ggtggagaag agagggtaaa 1080
 agccgtcgga gatttggtga gccaaactcg tgatcgactc ggtatctccg taagtttcaa 1140
 cgtggtgacg agtttacgac tcggtgatct gaatcgtgaa tctctcgggt gtgatcccga 1200
 cgagactttg gctgtgaact tagctttcaa gctttatcgt gttcccgcg aaagcgtatg 1260
 cacggagaat ccaagagacg aacttctccg gcgcgtgaag ggacttaaac cgcgctggt 1320
 tactctagtg gagcaagaaa tgaattcgaa tacggcgccg ttttaggga gagtgagtga 1380
 gtcatgcgcg tgttacggtg cgttgcttga gtcggtcgag tctacggttc ctagtacgaa 1440
 ttccgaccgt gccaaagttg aggaaggaat tggccggaag ctagtaaacc cgggtggcgtg 1500

61
 cont.

cgaaggaatc gatcgtatag agcgggtgcga ggtgttcggg aaatggcgaa tgcggatgag 1560
 catggctggg tttagagtaa tgccattgag tgagaagata gcggagtcga tgaagagtcg 1620
 tggaaccga gtccaccgg gctttaccgt taaagaagat aacggaggtg tgtgctttgg 1680
 ttggatggga cgggcactca ctgtcgcac cgtttggcgt taacttcaca cactcttttt 1740
 tttcttttta ttattaccat attattatta attttcgaga ttattctgat attattatca 1800
 ttgtgatttt ccgtttcgaa aagtgttaga atcttatgta acaaagaaaa aaaaaagact 1860
 tttatgtttt tctaataata aaagaaagag tgattgggtt caaaaaaaaa aaaaaaaaaa 1920
 aaaaaaaaa 1928

<210> 56
 <211> 524
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <221> SITE
 <222> 524
 <223> Xaa = STOP

<400> 56

Asp Leu Thr Ser Val Asn Asp Met Ser Leu Phe Gly Gly Ser Gly Ser
 1 5 10 15
 Ser Gln Arg Tyr Gly Leu Pro Val Pro Arg Ser Gln Thr Gln Gln Gln
 20 25 30
 Gln Ser Asp Tyr Gly Leu Phe Gly Gly Ile Arg Met Gly Ile Gly Ser
 35 40 45
 Gly Ile Asn Asn Tyr Pro Thr Leu Thr Gly Val Pro Cys Ile Glu Pro
 50 55 60
 Val Gln Asn Arg Val His Glu Ser Glu Asn Met Leu Asn Ser Leu Arg
 65 70 75 80
 Glu Leu Glu Lys Gln Leu Leu Asp Asp Asp Asp Glu Ser Gly Gly Asp
 85 90 95
 Asp Asp Val Ser Val Ile Thr Asn Ser Asn Ser Asp Trp Ile Gln Asn
 100 105 110
 Leu Val Thr Pro Asn Pro Asn Pro Asn Pro Val Leu Ser Phe Ser Pro
 115 120 125
 Ser Ser Ser Ser Ser Ser Ser Ser Pro Ser Thr Ala Ser Thr Thr Thr
 130 135 140
 Ser Val Cys Ser Arg Gln Thr Val Met Glu Ile Ala Thr Ala Ile Ala
 145 150 155 160
 Glu Gly Lys Thr Glu Ile Ala Thr Glu Ile Leu Ala Arg Val Ser Gln
 165 170 175

Thr Pro Asn Leu Glu Arg Asn Ser Glu Glu Lys Leu Val Asp Phe Met
 180 185 190
 Val Ala Ala Leu Arg Ser Arg Ile Ala Ser Pro Val Thr Glu Leu Tyr
 195 200 205
 Gly Lys Glu His Leu Ile Ser Thr Gln Leu Leu Tyr Glu Leu Ser Pro
 210 215 220
 Cys Phe Lys Leu Gly Phe Glu Ala Ala Asn Leu Ala Ile Leu Asp Ala
 225 230 235 240
 Ala Asp Asn Asn Asp Gly Gly Met Met Ile Pro His Val Ile Asp Phe
 245 250 255
 Asp Ile Gly Glu Gly Gly Gln Tyr Val Asn Leu Leu Arg Thr Leu Ser
 260 265 270
 Thr Arg Arg Asn Gly Lys Ser Gln Ser Gln Asn Ser Pro Val Val Lys
 275 280 285
 Ile Thr Ala Val Ala Asn Asn Val Tyr Gly Cys Leu Val Asp Asp Gly
 290 295 300
 Gly Glu Glu Arg Leu Lys Ala Val Gly Asp Leu Leu Ser Gln Leu Gly
 305 310 315 320
 Asp Arg Leu Gly Ile Ser Val Ser Phe Asn Val Val Thr Ser Leu Arg
 325 330 335
 Leu Gly Asp Leu Asn Arg Glu Ser Leu Gly Cys Asp Pro Asp Glu Thr
 340 345 350
 Leu Ala Val Asn Leu Ala Phe Lys Leu Tyr Arg Val Pro Asp Glu Ser
 355 360 365
 Val Cys Thr Glu Asn Pro Arg Asp Glu Leu Leu Arg Arg Val Lys Gly
 370 375 380
 Leu Lys Pro Arg Val Val Thr Leu Val Glu Gln Glu Met Asn Ser Asn
 385 390 395 400
 Thr Ala Pro Phe Leu Gly Arg Val Ser Glu Ser Cys Ala Cys Tyr Gly
 405 410 415
 Ala Leu Leu Glu Ser Val Glu Ser Thr Val Pro Ser Thr Asn Ser Asp
 420 425 430
 Arg Ala Lys Val Glu Glu Gly Ile Gly Arg Lys Leu Val Asn Ala Val
 435 440 445
 Ala Cys Glu Gly Ile Asp Arg Ile Glu Arg Cys Glu Val Phe Gly Lys
 450 455 460
 Trp Arg Met Arg Met Ser Met Ala Gly Phe Glu Leu Met Pro Leu Ser
 465 470 475 480
 Glu Lys Ile Ala Glu Ser Met Lys Ser Arg Gly Asn Arg Val His Pro
 485 490 495

Gly Phe Thr Val Lys Glu Asp Asn Gly Gly Val Cys Phe Gly Trp Met
500 505 510

Gly Arg Ala Leu Thr Val Ala Ser Ala Trp Arg Xaa
515 520

<210> 57
<211> 2635
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...2635
<223> n=a, c, g, or t

<400> 57

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tgggttctta tccggatgga ttccctggat ccatggacga gttggatttc aataaggact 180
ttgatttgcc tccctcctca aaccaaacct taggttttagc taatgggttc tatttagatg 240
acttagattt ctcatccttg gatcctccag aggcataatc ctcccagaac aacaacaaca 300
acaacatcaa caacaaagct gtagcaggag atctgttatc atcttcatct gatgacgctg 360
atctctctga ttctgttttg aagtatataa gccaaagtct tatggaagag gatatggaag 420
agaagccttg tatgtttcat gatgcttttg ctcttcaagc tgctgagaaa tctctctatg 480
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gattggctag tcatagccct gacggttctt gttcaggtgg tgcttttagt gattacgcta 600
gcaccactac cactacttcc tctgattctc actggagtgt tgatggtttg gagaatagac 660
cttcttgggt acatacacct atgccgagta attttgtttt ccagtctact tctaggtcca 720
acagtgtcac cgggtggtggg ggtggtggta atagtgcggt ttacggttca ggttttggcg 780
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aagtcgtgac cgacagtc aatggagcaa agattcgtgg gaagaaatca acttctacta 1260
gtcatagtaa cgattctaag aaagaaactg ctgatttgag gactcttttg gtgttatgtg 1320

cacaagctgt atcagtggtat gatcgtagaa ccgccaacgt ttagctaagg cagatacgag 1380
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cgtctgcagc agacatgttg aaggcttacc agacatacat gtcgggtctgc cctttcaaga 1560
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nnnnnnnnnn nnnnnnnnnn nnnagattca ggagacaggt catcgcttgg ctcgatactg 1800
tcagcgacac aatgttccgt ttgagtacaa cgcaattgct cagaaatggg gaaacgatcc 1860
aagtcgaaga cttaaagctt cgacaaggag agtatgtggt tgtgaactct ttgttccgtt 1920
tcaggaacct tctagatgag accgttctgg taaacagccc gagagatgca gttttgaagc 1980
tgataagaaa aataaaccg aatgtcttca ttccagcgat cttaaagcggg aattacaacg 2040
cgccattctt tgtcacgagg ttccagagaag cgttgtttca ttactcggct gtgtttgata 2100
tgtgtgactc gaagctagct aggggaagac agatgaggct gatgtatgtg tttgagtttt 2160
atgggagaga gattgtgaat gttgtggctt ctgaaggaa agagagagtg gagagccgag 2220
agacatataa gcagtggcag gcgagactga tccgagccgg atttagacag cttccgcttg 2280
agaaggaaact gatgcagaat ctgaagtga aaatcgaaaa cgggtacgat aaaaacttcg 2340
atgttgatca aaacggtaac tggttacttc aagggtggaa aggtagaatc gtgtatgctt 2400
catctctatg ggttccttcg tcttcataga tgttgtttct tacgttctaa gcgactggga 2460
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tagggttctt gaacactaga atgttgttat attatgcttg tgacatagcg tgtgtaagag 2580
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<210> 58
<211> 809
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...809
<223> Xaa=unknown amino acid

<400> 58

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1 5 10 15

Arg Ile Lys Ile Arg Pro Leu Leu Asp Ile Asn Asp Ser Gly Phe Leu
 20 25 30
 Gly Phe Trp Ser Trp Ile His Met Gly Ser Tyr Pro Asp Gly Phe Pro
 35 40 45
 Gly Ser Met Asp Glu Leu Asp Phe Asn Lys Asp Phe Asp Leu Pro Pro
 50 55 60
 Ser Ser Asn Gln Thr Leu Gly Leu Ala Asn Gly Phe Tyr Leu Asp Asp
 65 70 75 80
 Leu Asp Phe Ser Ser Leu Asp Pro Pro Glu Ala Tyr Pro Ser Gln Asn
 85 90 95
 Asn Asn Asn Asn Asn Ile Asn Asn Lys Ala Val Ala Gly Asp Leu Leu
 100 105 110
 Ser Ser Ser Ser Asp Asp Ala Asp Phe Ser Asp Ser Val Leu Lys Tyr
 115 120 125
 Ile Ser Gln Val Leu Met Glu Glu Asp Met Glu Glu Lys Pro Cys Met
 130 135 140
 Phe His Asp Ala Leu Ala Leu Gln Ala Ala Glu Lys Ser Leu Tyr Glu
 145 150 155 160
 Ala Leu Gly Glu Lys Asp Pro Ser Ser Ser Ser Ala Ser Ser Val Asp
 165 170 175
 His Pro Glu Arg Leu Ala Ser His Ser Pro Asp Gly Ser Cys Ser Gly
 180 185 190
 Gly Ala Phe Ser Asp Tyr Ala Ser Thr Thr Thr Thr Thr Ser Ser Asp
 195 200 205
 Ser His Trp Ser Val Asp Gly Leu Glu Asn Arg Pro Ser Trp Leu His
 210 215 220
 Thr Pro Met Pro Ser Asn Phe Val Phe Gln Ser Thr Ser Arg Ser Asn
 225 230 235 240
 Ser Val Thr Gly Gly Gly Gly Gly Gly Asn Ser Ala Val Tyr Gly Ser
 245 250 255
 Gly Phe Gly Asp Asp Leu Val Ser Asn Met Phe Lys Asp Asp Glu Leu
 260 265 270
 Ala Met Gln Phe Lys Lys Gly Val Glu Glu Ala Ser Lys Phe Leu Pro
 275 280 285
 Lys Ser Ser Gln Leu Phe Ile Asp Val Asp Ser Tyr Ile Pro Met Asn
 290 295 300
 Ser Gly Ser Lys Glu Asn Gly Ser Glu Val Phe Val Lys Thr Glu Lys
 305 310 315 320
 Lys Asp Glu Thr Glu His His His His His Ser Tyr Ala Pro Pro Pro
 325 330 335
 Asn Arg Leu Thr Gly Lys Lys Ser His Trp Arg Asp Glu Asp Glu Asp
 340 345 350

D'
 cont.

Phe Val Glu Glu Arg Ser Asn Lys Gln Ser Ala Val Tyr Val Glu Glu
 355 360 365
 Ser Glu Leu Ser Glu Met Phe Asp Asn Met Phe Leu Cys Gly Pro Gly
 370 375 380
 Lys Pro Val Cys Ile Leu Asn Gln Asn Phe Pro Thr Glu Ser Ala Lys
 385 390 395 400
 Val Val Thr Ala Gln Ser Asn Gly Ala Lys Ile Arg Gly Lys Lys Ser
 405 410 415
 Thr Ser Thr Ser His Ser Asn Asp Ser Lys Lys Glu Thr Ala Asp Leu
 420 425 430
 Arg Thr Leu Leu Val Leu Cys Ala Gln Ala Val Ser Val Asp Asp Arg
 435 440 445
 Arg Thr Ala Asn Val Xaa Leu Arg Gln Ile Arg Glu His Ser Ser Pro
 450 455 460
 Leu Gly Asn Gly Ser Glu Arg Leu Ala His Tyr Phe Ala Asn Ser Leu
 465 470 475 480
 Glu Ala Arg Leu Ala Gly Thr Gly Thr Gln Ile Tyr Thr Ala Leu Ser
 485 490 495
 Ser Lys Lys Thr Ser Ala Ala Asp Met Leu Lys Ala Tyr Gln Thr Tyr
 500 505 510
 Met Ser Val Cys Pro Phe Lys Lys Ala Ala Ile Ile Phe Ala Asn His
 515 520 525
 Ser Met Met Arg Phe Thr Ala Asn Ala Asn Thr Ile His Ile Ile Asp
 530 535 540
 Phe Gly Ile Ser Tyr Gly Phe Gln Trp Pro Ala Leu Ile His Arg Leu
 545 550 555 560
 Ser Leu Ser Arg Pro Gly Gly Ser Pro Lys Leu Arg Ile Thr Gly Xaa
 565 570 575
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Glu Phe Arg Arg Gln
 580 585 590
 Val Ile Ala Trp Leu Asp Thr Val Ser Asp Thr Met Phe Arg Leu Ser
 595 600 605
 Thr Thr Gln Leu Leu Arg Asn Gly Glu Thr Ile Gln Val Glu Asp Leu
 610 615 620
 Lys Leu Arg Gln Gly Glu Tyr Val Val Val Asn Ser Leu Phe Arg Phe
 625 630 635 640
 Arg Asn Leu Leu Asp Glu Thr Val Leu Val Asn Ser Pro Arg Asp Ala
 645 650 655
 Val Leu Lys Leu Ile Arg Lys Ile Asn Pro Asn Val Phe Ile Pro Ala
 660 665 670

Ile Leu Ser Gly Asn Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg
675 680 685

Glu Ala Leu Phe His Tyr Ser Ala Val Phe Asp Met Cys Asp Ser Lys
690 695 700

Leu Ala Arg Glu Asp Glu Met Arg Leu Met Tyr Val Phe Glu Phe Tyr
705 710 715 720

Gly Arg Glu Ile Val Asn Val Val Ala Ser Glu Gly Thr Glu Arg Val
725 730 735

Glu Ser Arg Glu Thr Tyr Lys Gln Trp Gln Ala Arg Leu Ile Arg Ala
740 745 750

Gly Phe Arg Gln Leu Pro Leu Glu Lys Glu Leu Met Gln Asn Leu Lys
755 760 765

Leu Lys Ile Glu Asn Gly Tyr Asp Lys Asn Phe Asp Val Asp Gln Asn
770 775 780

Gly Asn Trp Leu Leu Gln Gly Trp Lys Gly Arg Ile Val Tyr Ala Ser
785 790 795 800

Ser Leu Trp Val Pro Ser Ser Ser Xaa
805

<210> 59
<211> 90
<212> PRT
<213> Oryza sativa

<220>
<221> SITE
<222> 1...90
<223> Xaa=unknown amino acid

<400> 59

Gln Glu Ala Asp His Asn Lys Thr Gly Phe Leu Asp Arg Phe Thr Glu
1 5 10 15

Ala Leu Phe Tyr Tyr Ser Ala Val Phe Asp Ser Leu Asp Ala Ala Asn
20 25 30

Asn Asn Asn Asn Asn Asn Asn Gln Arg Met Glu Ala Glu Tyr Leu Gln
35 40 45

Arg Glu Ile Cys Asp Ile Val Cys Gly Glu Gly Ala Ala Arg Xaa Glu
50 55 60

Arg His Glu Pro Leu Ser Arg Trp Arg Asp Arg Leu Thr Arg Ala Gly
65 70 75 80

Leu Ser Ala Val Pro Leu Gly Ser Asn Ala
85 90

<210> 60
<211> 199

<212> DNA
<213> Daucus carota

<220>
<221> modified_base
<222> 1...199
<223> n=a, c, g, or t

<400> 60

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attagtttagc tctgtcttag gaatctatgc ttctcttccn gcaacagtgg tgcctcctca 180
tggtcagaaa gtggcctca 199

<210> 61
<211> 66
<212> PRT
<213> Daucus carota

<220>
<221> SITE
<222> 1...66
<223> Xaa=unknown amino acid

<400> 61

D1 Cont.
Ser Ala Asp Asn Phe Xaa Glu Ala Asn Thr Met Leu Leu Glu Ile Ser
1 5 10 15
Glu Leu Ser Thr Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30
Phe Ser Glu Xaa Met Ser Xaa Arg Leu Val Ser Ser Cys Leu Gly Ile
35 40 45
Tyr Ala Ser Leu Pro Ala Thr Val Val Pro Pro His Gly Gln Lys Val
50 55 60
Ala Ser
65

<210> 62
<211> 321
<212> DNA
<213> Glycine max

<220>
<221> modified_base
<222> 1...321
<223> n=a, c, g, or t

<400> 62

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 ttggtgagtt catgtctagg gatatacgca actttgccac acacacacca aagccacaag 180
 gtagcttcag cttttcaagt gttcaatggc attagtcctt tagtggagtt ctcacacttc 240
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 cttgatataa tgcaagggtt g 321

<210> 63
 <211> 107
 <212> PRT
 <213> Glycine max
 <220>
 <221> SITE
 <222> 1...107
 <223> Xaa=unknown amino acid

<400> 63

Ser Thr Glu Asn Leu Glu Asp Ala Asn Lys Met Leu Leu Glu Ile Ser
 1 5 10 15
 Gln Leu Ser Thr Pro Phe Xaa Thr Ser Ala Gln Arg Val Ala Ala Tyr
 20 25 30
 Phe Ser Glu Ala Ile Ser Ala Arg Leu Val Ser Ser Cys Leu Gly Ile
 35 40 45
 Tyr Ala Thr Leu Pro His Thr His Gln Ser His Lys Val Ala Ser Ala
 50 55 60
 Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Glu Phe Ser His Phe
 65 70 75 80
 Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val
 85 90 95
 His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu
 100 105

<210> 64
 <211> 195
 <212> DNA
 <213> Picea abies

<220>
 <221> modified_base
 <222> 1...195
 <223> n=a, c, g, or t

<400> 64

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nnnnnnnnnn nntgcatagg aatgtattct cctctccctc ctattcacat gtcccagagc 180
cagaaaattg tgaat 195

<210> 65
<211> 65
<212> PRT
<213> Picea abies

<220>
<221> SITE
<222> 1...65
<223> Xaa=unknown amino acid

<400> 65

Ser Ala Asp Asn Phe Glu Glu Ala Asn Thr Ile Leu Pro Gln Ile Thr
1 5 10 15

Glu Leu Ser Thr Pro Tyr Xaa Asn Ser Val Gln Arg Val Ala Ala Tyr
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Ile Gly Met
35 40 45

Tyr Ser Pro Leu Pro Pro Ile His Met Ser Gln Ser Gln Lys Ile Val
50 55 60

Asn
65

<210> 66
<211> 2151
<212> DNA
<213> Zea mays

<400> 66

gatatcagca tcatcaatth taaatgtaag ttggcaaaag atcatgaggg ttctcatagt 60
aatttgcca caaggtatga cactgtctca attgagcaat ctagtagaga aactgatcca 120
tcatatattg ctcatattga aagtgaaaaa gatatgctca agaacctagt agagaagcta 180
aaaattgaaa aatctagctc tactagaaaa atatgatagg ttgcctgttt ctcatgaaaa 240
tttattagat aatcatatca tggctagatg tgcctcatga ggttgttctt gctagtttag 300
attcctgtgg gcattcatct ctttttagatg cactaacatg ataggaagtt tctaactctgg 360
tgcttcacaa ttctggtgat tcatgcttcc ttcattgcaa ttgatattga tgcttgattc 420
atgcttcagt cactttgtgc gtttaattgg tattgtatgt atcactagat tgtaggggtg 480
ctgcaactag tgtttcacca tgtgggttttt tagtatcatt cgtattagtt tctaactttc 540
tattgatata ttaaagtgat aactagtttt agaaatattc tcttgtgcca ttaatgctac 600
aacttgtttt tagcgtgtac gtttagcatta taatatttcc ttattatgaa agcggaagag 660

aaacgcgccc aaccagagca tccacgtcgt ctcatttcac cttcatcggt ggatcataga 720
 tgagcgggtcc acggtgaact ccgtttgcct gcaaaaccac gtcctctacg cgctgttaag 780
 tagcttctag aaacatcacg atgtgtcccg tccattcctt taggaggagc cggatccggc 840
 gccgcagtcg cccaaggtcc cgaccgcgcg ggccctgggc gccgccgcca aggagcggaa 900
 ggaggtgcag cggcggaagc agcgcgacga ggagggcctc cacctgctga gtgctgacgc 960
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 tgctggagat cgcggagctg gccacgccgt tcggcacctc gaccagcgcg gtggccgcct 1080
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 aggaggcgtt cgagcgggag gacggtgtgc acatcatcga cctcgacatc atgcaggggc 1320
 tgcagtggcc gggcctcttc cacatccttg tctccgccc cggcggcccg ccaggggtca 1380
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 acgttgaccc gcagaagctg ggcgtcacgc ggcgggaggc cgtcgccgtc cactggccgc 1560
 accactcgct ttacgacgtc atoggtccg actccaacac gctctggctc atccaaagg 1620
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 cgcgttttga agctcaaaag gcgatttctt ccgaggtttg ctgttgagcg ctatttttga 1860
 aaccccatth tctcaattga tttttatttt ttaaagaaaa attagttcat ttttctcttg 1920
 tgaaatggag tcccaaaacta accctaatat taaaaaaaac gcgcttttga gctcaaaacg 1980
 ctgcttggtt tgaccaacca gctttatagg tttaaaagg ttgaatcttg acaatgcttt 2040
 tgaaaagggt gaatcttgac aatgcttttg agatgatact gtagttagt ctgtagtgga 2100
 gcatcctcca tggctcttgg tgatogagaa ttctgcagc ccgggggatc c 2151

<210> 67
 <211> 716
 <212> PRT
 <213> Zea mays

<220>
 <221> SITE
 <222> 1...716
 <223> Xaa=unknown amino acid

<400> 67

Tyr Gln His His Gln Phe Xaa Met Xaa Val Gly Lys Arg Ser Xaa Gly
1 5 10 15
Phe Ser Xaa Xaa Phe Gly His Lys Val Xaa His Cys Leu Asn Xaa Ala
20 25 30
Ile Xaa Xaa Arg Asn Xaa Ser Ile Ile Tyr Cys Ser Tyr Xaa Lys Xaa
35 40 45
Lys Arg Tyr Ala Gln Glu Pro Ser Arg Glu Ala Lys Asn Xaa Lys Ile
50 55 60
Xaa Leu Tyr Xaa Lys Asn Met Ile Gly Cys Leu Phe Leu Met Lys Ile
65 70 75 80
Tyr Xaa Ile Ile Ile Ser Trp Leu Asp Val Ala His Glu Val Val Leu
85 90 95
Ala Ser Leu Asp Ser Cys Gly His Ser Ser Leu Leu Asp Ala Leu Thr
100 105 110
Xaa Xaa Glu Val Ser Asn Leu Val Leu His Asn Ser Gly Asp Ser Cys
115 120 125
Phe Leu His Cys Asn Xaa Tyr Xaa Cys Leu Ile His Ala Ser Val Thr
130 135 140
Leu Cys Val Xaa Leu Val Leu Tyr Val Ser Leu Asp Cys Arg Val Ser
145 150 155 160
Ala Thr Ser Val Ser Pro Cys Gly Phe Leu Val Ser Phe Val Leu Val
165 170 175
Ser Asn Phe Leu Leu Ile Tyr Xaa Ser Asp Asn Xaa Phe Xaa Lys Tyr
180 185 190
Ser Leu Val Pro Leu Met Leu Gln Leu Val Phe Ser Val Tyr Val Ser
195 200 205
Ile Ile Ile Phe Pro Tyr Tyr Glu Ser Gly Arg Glu Thr Arg Pro Thr
210 215 220
Arg Ala Ser Thr Ser Ser His Phe Thr Phe Ile Val Gly Ser Xaa Met
225 230 235 240
Ser Gly Pro Arg Xaa Thr Pro Phe Ala Cys Lys Thr Thr Ser Ser Thr
245 250 255
Arg Cys Xaa Val Ala Ser Arg Asn Ile Thr Met Cys Pro Val His Ser
260 265 270
Phe Arg Arg Ser Arg Ile Arg Arg Arg Ser Arg Pro Arg Ser Arg Pro
275 280 285
Pro Arg Pro Arg Pro Pro Pro Pro Arg Ser Gly Arg Arg Cys Ser Gly
290 295 300
Gly Ser Ser Ala Thr Arg Arg Ala Ser Thr Cys Xaa Val Leu Thr Leu
305 310 315 320

Leu Leu Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala
 325 330 335
 His Gln Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr
 340 345 350
 Ser Thr Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg
 355 360 365
 Val Val Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser
 370 375 380
 Pro Ala Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val
 385 390 395 400
 Phe Asn Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn
 405 410 415
 Gln Ala Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile
 420 425 430
 Asp Leu Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile
 435 440 445
 Leu Val Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu
 450 455 460
 Gly Ala Ser Met Asp Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp
 465 470 475 480
 Phe Ala Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu
 485 490 495
 Lys Ala Gly Asn Val Asp Pro Gln Lys Leu Gly Val Thr Arg Arg Glu
 500 505 510
 Ala Val Ala Val His Trp Pro His His Ser Leu Tyr Asp Val Ile Gly
 515 520 525
 Ser Asp Ser Asn Thr Leu Trp Leu Ile Gln Arg Ser Ser Ile Phe Leu
 530 535 540
 Leu Cys Leu Ser Ser Met Ser Asn Leu Asp Ala Ile Met Thr Thr Phe
 545 550 555 560
 Gln Leu Leu Thr Leu Asp Asn Val Ser Phe Thr Ala Ser Ile Lys Ser
 565 570 575
 Trp Xaa Tyr Ile His Tyr Ser Tyr Phe Xaa Asn Ile Leu Arg Arg Phe
 580 585 590
 Pro Ala His Ser Lys Lys Lys Ser Arg Phe Glu Ala Gln Lys Ala Ile
 595 600 605
 Ser Ser Glu Val Cys Cys Xaa Ala Leu Phe Trp Lys Pro His Phe Leu
 610 615 620
 Asn Xaa Phe Leu Phe Phe Lys Glu Lys Leu Val His Phe Ser Leu Val
 625 630 635 640
 Lys Trp Ser Pro Lys Leu Thr Leu Ile Leu Lys Lys Thr Arg Phe Gly
 645 650 655

Ala Gln Asn Ala Arg Cys Tyr Asp Gln Pro Ala Leu Xaa Val Xaa Lys
660 665 670

Gly Xaa Ile Leu Thr Met Leu Leu Lys Arg Leu Asn Leu Asp Asn Ala
675 680 685

Phe Glu Met Ile Leu Xaa Cys Ser Leu Xaa Trp Ser Ile Leu His Gly
690 695 700

Leu Trp Xaa Ser Arg Ile Pro Ala Ala Arg Gly Ile
705 710 715

<210> 68
<211> 426
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...426
<223> n=a, c, g, or t

<400> 68

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tctacagagc attgaaatgc aaagagcctc cttcggatga gaggcttgca gctatgagat 180
cctgtttgaa gtctgccctt gtttcaagtt cgggttttta gcagctaattg gtgcgatact 240
tgaagcaatc aaaggtgaag aagaagttca cataatcgat ttcgatataa accaagggaa 300
ccaatacatg acactgatac gaagcattgc tgagttngcc tgggtaaaacg acctcgccctg 360
aggttaaaca ggaattgatg accctgaatc cagtnccaac cgctccattt gggggggcct 420
aaagaa 426

<210> 69
<211> 343
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...343
<223> n=a, c, g, or t

<400> 69

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gcttcttcgt ctaaccaagg cggcggagga gatactata ctacaaacaa gcggttgaaa 120
tgctcaaacg gcgtcgtgga aaccactaca gcgacggctg agatcaactc ggcatgttgt 180

cctggttgac tgcaggaga acggtgtgcg tctcgttcac gcgcttttgg cttgcgctga 240
aagctgttca gaaagagaat ctgactgtag cggantctgg tgaagcaaata cggattctta 300
gccgtttctc aaatcgagc gatgagaaaa gtcgctactt act 343

<210> 70
<211> 372
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...372
<223> n=a, c, g, or t

<400> 70

aaatttttca attacctaata ataataaaa ataagattt aacaagtga aaagggaaaa 60
acagtaggat ttagtttggc ttcggtcga aatctatcat cataaccgg tcaacagatc 120
aattcattga gccaccatct aattggtgag agtttccaag ccgaggtggc tatgagcgg 180
cgtgtgtgcc aaccaacat gagacagccg tcaactctct ccaccgata accctcaccg 240
ccgttgaaca gagccaaaag cataactcgt tgcttaaacg cattcgaacc aatatgtga 300
gccgcaaac cagcagacc gaaccgggtc ctccantgac ttcaacgttt catgacgggt 360
caacttcggt ca 372

<210> 71
<211> 399
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...399
<223> n=a, c, g, or t

<400> 71

ttttttttta agtgagaacc ttaacaaatt taaccatttg aactgaaata tgaacatga 60
aagactcatt cacacttagc aaatagggtt agaaccaaaa ctctaattat ttttatataa 120
tagggaaaaa aaagaaagaa aaattcttcc ataagtgtta gattagcttt tagtacctgt 180
gatcaccctt aacctctggt aataatacat ggagatgatt taaccagtta cacaataacc 240
caagattaca gtaaaaacat aattatgttt tatgaaacat aaagactata tgctcttgtc 300
acttatctta cctccaagct gaagcaacgg attagcttt tctcctcca gcaaaaatgg 360
gagctcacc atttcttctt taagggtgta cttnttgca 399

<210> 72
<211> 307
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...307
<223> n=a, c, g, or t

<400> 72

gctatggaag gagagaagat ggttcattgtg attgatctcg atgcttctga gccagctcaa 60
tggcttgctt tgcttcaagc ttttaactct aggcctgaag gtccacctca tttgagaatc 120
actggtgttc atcaccagaa ggaagtgtt gaacaaatgg ctcatagact cattgaggaa 180
gcagagaaac tcgatatccc gtttcagttt aatcccgttg tgagtaggtt agactgttta 240
aatgtagnac agtttagggt ttaaacagga gaggcnttag ccgttagctc gggtcttcaa 300
ttgcata 307

<210> 73
<211> 345
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1..345
<223> n=a, c, g, or t

<400> 73

ccgatcatca aattagttat cttcagctca aattggattt ggtttggtat tacaccacac 60
ccagacaaaa ttgaaccaac acacaaaggc tttacatgca gaggcagtag aagcatttaa 120
gccaaaatag cataaagaga cagaaagtca ccatacaaaa acaactaaga ttgtgtcccc 180
atgtatacaa aaaagaaagg gactctgctc ataaccacaaa tagaagacaa actgtaatat 240
atcattcact tcttgcattt ccaagctgat accgagtata gaggtcgatc ttgccagcaa 300
attactgctc acccgtcttc ttccttgatt ctatacccat caaaa 345

<210> 74
<211> 406
<212> DNA
<213> Arabidopsis thaliana

<400> 74

gtggaattac aattacagca atttgatttc aattgttgaa tctaagcctg gtttcatttc 60
tttggcctgg aacgatttac ctctcctcac tctttcttcc tggcgataac caaaccaaac 120

cgatccggta ttcttagttt tgttttgttt tcaatgttat ttttggttag acaaattattc 180
aattgttaat atactccgtg gtcagagtgt tttgtttttc ttttagttcg aacgttgaat 240
taattcaggg gtaggttttg aattctctga accttatgtg ttttttggtt acatcatttg 300
gatttgtgaa ctaggtttta aaactgggtct tagtcttgtt gttttctcat tagataattt 360
aaactggttt gcttctttat ttttggttg ggataaaagt gaccgg 406

<210> 75
<211> 406
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...406
<223> n=a, c, g, or t

<400> 75

gtggaattnc aattacagca atttgatttc aattgttgaa tctaagcctg gttcatctc 60
tttggcctgg aacgatttac ctctctcac tcttcttcc angcgataac caaaccaaac 120
cgatgccggg attcttagtt ttgtttgttt ttcaatgtta ttttttggtt gacaaatatt 180
caattgttaa tatactccgt ggtagagtgt tttgtttttn ctttagttc gaacgttgaa 240
ttaattcagg ggtaggtttt gaattctctg aacctnatgt gtttnttgtt aacatcattt 300
ggatttgtga actaggttta aaaactggnc ttagtcttgt tgttttctca ttaggataat 360
ttaaactggt ttgcttcttt attttnggtt gggataaagt gaccgg 406

<210> 76
<211> 409
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...409
<223> n=a, c, g, or t

<400> 76

caaaactaca tttcatcact tttttgagca aaattacaaa taaaagagta gttacaaata 60
tatttggctt tcaacttcct aattttatga aatagtaatt acatctcaaa cagatgacca 120
gaaccgggtca ctttatccaa ccaaaaataa agaagcaaac cagtttaaatt tatctaata 180
gaaaacaaca agactaagac cagtttttaa acctagttca caaatccaaa tgatgttacc 240
aaaaaacaca taaggttcag agaattcaaa acctaccctt ganttaattc aacgttcgaa 300
ctaaaagaaa aacaaaacac tctgaccacg gagtatatta acatttgatt atttgtctaa 360

ccaaaaataa cattgaaaac aaaacaaaac tanggaatac cggatcggc

409

<210> 77
<211> 295
<212> DNA
<213> Arabidopsis thaliana

<400> 77

cccaacgggt cctgagcttc ttacttatat gcatatcttg tatgaagcct gcccttattt 60
caaattcggg tatgaatctg ctaatggagc tatagctgaa gctgtgaaga acgaaagttt 120
tgtgcacatt atcgatttcc agatttctca aggtgggtcaa tgggtgagtt tgatccgtgc 180
tcttgggtgct agacctgggtg gacctccgaa cgtaggata acgggaattg atgatccgag 240
atcatcgttt gctcgtcaag gaggacttgc agttagttgc acaaagcact tggca 295

<210> 78
<211> 319
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...319
<223> n=a, c, g, or t

<400> 78

gggtcatcaa catatcactt actactacaa catttgacaa cttgttcctn cggatcatgc 60
atgagtttta cttttacaaa cagattctgc aaactttaaa agcaagtttc taatctcttc 120
tgaaaccgaa caaggttttt attagttacc tccaagcaca agaagtgata agaggttgat 180
tcttccatcc taaatacaat gctccatctc tttcttcaag tgtatacttc tctgaataac 240
tctcaagcaa tcctttgatt gttgcgttca catacgagct caaaggatac ggtttaaatac 300
ccgccatgtg aaaccgaga 319

<210> 79
<211> 409
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1..409
<223> n=a, c, g, or t

<400> 79

caaaaattta tatatttgtg tgaacttaaa tttaaaaatc catcgactg agcaaaataa 60
nntcagaaac taaaaatttg tcatttaaga taaattgaat taaggaaaat atttttttta 120

taattgaaac tccggtggaa atcaggagga gcgacatctc catgctgaaa ctccgacgag 180
 ttctgtcctt tgccaacata ggagaagtga gttatgtttc tcctcgacgt gaaagcctct 240
 cactggcgtc cgttggntna aacactcggc ttgagactcc gtgaagttac tgtgcgtcac 300
 cggtgagaaa cccatctgta gaaacatcgc ttgccacgtc atcatcggcc tttctatcgg 360
 acggctacga tccaacacca gcttctctat ctccggctgt ataaggaaa 409

<210> 80
 <211> 457
 <212> DNA
 <213> Arabidopsis thaliana

<220>
 <221> modified_base
 <222> 1..457
 <223> n=a, c, g, or t

<400> 80

ctattttnac aatttatttt gttattagaa gtggtagtgg agtgaaaaaa caaatcctaa 60
 gcagtcctaa ccgatccccg aagctaaaga ttctncacct tcccaaataa agcaaaacct 120
 agatccgaca ttgaaggaaa aaccttttag atccatctct gaaaaaaacc aaccatgaag 180
 agagatcatc atcatcatca tcatcaagat aagaagacta tgatgatgaa tgaagaagnc 240
 gacggtaacg gcatggatga gcttctagct gttcttgggt ataagggttag gtcatccgaa 300
 atggctgatg tttgctcaga aactcgagca gcttgaagtt atgatgtcta atgttcaagn 360
 aagncggtot ttntcaactt cgcnaactnn gactgttcac tntaatncgg cggnnngtttt 420
 caacgntggc ttgntttcna tgntnaccga ccttaat 457

<210> 81
 <211> 355
 <212> DNA
 <213> Arabidopsis thaliana

<220>
 <221> modified_base
 <222> 1...355
 <223> n=a, c, g, or t

<400> 81

atgggaaagg agcatttaat ctcgactcaa ttgctctacg agctctctcc ttgtttcaaa 60
 ctcggttttcg aggccgcgaa tctcgccatt ntcgacgccg ccgataacaa cgacgggtgga 120
 atnatgatac cgcacgtaat cgatttcaat atcggagaag gtggacaata cgttaacctt 180
 ctcontacat tatccacgcg ccggaatggt aaaagtnaga gtcagaattc tccggtgggt 240
 aanatcacc cccgtggcga acaacgttta cgggatgttt agtcggatga cgggtggnga 300

agagagggttt aaaagcccggt ncgngntttt ttttgnagcc actncngntn atccg 355

<210> 82
<211> 381
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...381
<223> n=a, c, g, or t

<400> 82

actcggatc tccgtaagtt tcaacgtggt gacgagttta cgactcgggtg atctgaatcg 60
tnaatctntc ggggtgtnatc ccgacgagac tttggctgta aacttagctt tcaagcttta 120
tcgtgttccc gacgaaagcg tatncacgga gaatccaaga cgaacttctc cggcgcgtga 180
agggacttaa accgcgcgtg gttactctag tggagcaaga aatgaattcg aatacggcgc 240
cgtttttagg gagagtaagt nagtcatgcg cgtttnacgg tgcgttnctt gantcggtcg 300
agtctacggg tcctagtacg gatttccgac ccgtgccaaa atttnnngaa ggaatttgcc 360
cgnaannttn naaaccgggt g 381

<210> 83
<211> 533
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1.533
<223> n=a, c, g, or t

<400> 83

atnaaaagtc tttttttttt ctttggtaca taagattcct acacttttcg aaatggaaaa 60
tcacaatgat aataatatca gaataatctc gaaaattaat aataatatgg taataataag 120
aagaaaaaaaa aagagtgtgt gaagttaacg ccaagcggat gcgacagtga gtgcccgtcc 180
catccaacca aagcacacac ctccgttata ttctttaacg gtaaagcccg ggtggactcg 240
gtttccacga ctcttcacg actccgctat cttctcactc aatggcatta actcaaacc 300
agccatgctc atccgcattc gccatttncc ggaacanctc gnaccgctct atacgntcga 360
ttccttcgga cggcaccgng ttttactage ttccggncaa ttcttctctn aactttggaa 420
cggtnggatt cgttcttggg accgtaggct tggcccgtt aagaacgnac cgtacagggg 480
nntgtttnt taatttcct taaaaggggg cgnttttggg ttnatttttn ana 533

<210> 84
<211> 377
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...377
<223> n=a, c, g, or t

<400> 84

caaccntttt atagtcaagc agctctcaac gctttttttt caaggtctgt naagcctcga 60
aattatcaga ntttncaatc tccgtcgccg atgattganc tcacgtcggg gaatgatatg 120
agttnttttg gnggttcttg ttcattctcag cnttacgggt taccgggtcc caggtctcan 180
acgcaacagc aacaatcgga ttacgggttta tttgggtggga tccgaatggg aatcgggtcg 240
ggatattaata attatccaac attaacgggc gttccgtgta ttgaaccggg tcaaaaccgg 300
gttcatgaat cggaggacca ttgttganta agnttaagag agctttgtng aaacaanctt 360
tttangattg atnaccg 377

<210> 85
<211> 508
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...508
<223> n=a, c, g, or t

<400> 85

tgcatacaac gcaccgtttt tcgtaacacg gtttcgcgaa gtctatttca tttctcctcg 60
atttttgaca tgcttgagac aattgtgcca cgagaagacg aagagaggat gttccttgag 120
atggaggtct ttgggagaga ggcaactgaat gtaattgctt gcnaagggtg ggaaagagtg 180
gagaggcctg agacatacaa gcagtggcac gtacgggcta tgaggtcagg gttggtgcag 240
gttccatttg acccaagcat tatgaagaca tcgctgcata aggtccacac attctaccac 300
aaggattttg tgatcgggtc aagataaccg ggtggctctt tcaaggntgg aaggggaagg 360
anctgtcatg ggtctttctt ttttgaaaac cagagtccca aggttttncc ggaaaatcct 420
ccttggnnat ttanangnccc tttttttgtt ttttttcccn gnnanttccc nggggnagtt 480
tccagtttna gngnggtttt tncnaaaa 508

<210> 86

<211> 466
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...466
<223> n=a, c, g, or t

<400> 86

tgcatacaac gcaccgtttt tngtaacacg gtttcgcgaa gtctatttna tttctcctcg 60
atTTTTgaca tgcttganac aattgtacca cgagaagacg aagagaggat gttccttgan 120
atggagggtct ttgggagana ggcactgaat gtaattnctt gcnaagggtg ggaaagagtg 180
gagaggcctg anacatacaa gcagtggcac gtacgggcta tgaggtcagg gttggtgcag 240
gttccatttg acccaagcat tatgaagaca tcgctgcata aggtccacac attctaccac 300
aagggttttt tgatccntcc aagataaccg gtggctcttn caaagctttg aagggaagga 360
cctttcatgg gtcttttctt ttttggaaac aggtcccaag gttttncctg gaatccccgn 420
tggaattttg nnnccccctt tgattttttt tccccgnaa ttnccc 466

<210> 87
<211> 342
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...342
<223> n=a, c, g, or t

<400> 87

gagacggtag atccgncgcg ctaaagcttc ggcgaaagtaa gtagccactt tnntnatagc 60
tccggcttga nacacagcta agcatccnat ttgcttcaca agagcttccg ctagagtcaa 120
attgtncctc tggattgctt ctgcacaagc cataagcgcg tggactaaac gaacaccgtt 180
ctcttgcgag tnaaccagga taacagaacg anttgactca gccgcgcgcg tcgttgctgt 240
ggtggttgtc gtcaccgtcg ttcctatgac tccaccaatn tgggtaccgc tcgaagtcga 300
tgtaaccata ggatcagggc ttcgngcatg nttttaaaac gg 342

<210> 88
<211> 321
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...321
<223> n=a, c, g, or t

<400> 88

gtttgattcg ttggaaggag ttccgaatag tcaagacaaa gtcatttctg aagtttactt 60
agggaaacag atttgtaatc nggtggcttg tnaagntcct gacagagtcg agagacacga 120
aacgttgagt caatngggaa accggtttgg ttcgtccggt ttagcgccgg cacatcttgg 180
gtctaacgcg ttttaagcaag cnagtatnct tttntntgtn tttaatagtg gccaagggtta 240
tcgtgtggag gagagtaatg gatgtttgat gttgggttgg cactctnngc ccactcattt 300
accacctccg gttttggaaa c 321

<210> 89

<211> 490

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> modified_base

<222> 1...490

<223> n=a, c, g, or t

<400> 89

taaaaattga tccccaaaag gcataaatta aaaatgacct accaaaacga tatatataag 60
aatttttaaac aagtgaacga aaataaataa aataaacaaa aggcaaacg gttcgattca 120
gttcggttta ggtcttggtc cgaacatatg tcattaccgg tccactgatc tcaatctcaa 180
attcactcgn ctogactcca ccaccgtcgt atgcttcgag tcaaactcag tacgncgccg 240
tcgagagttt ccaagcggag gtggtaatga gtggacgagt gtgccaaccc ancatcaaac 300
atccattact ttctccaca cgntaacctt ggccactatt taaacacagg caaaangcat 360
acttgtttgc ttaaaccgcg ttagnccnaa gntttgccgg gcgntaaacc cggcngaccc 420
aanccggnnt tcccnatttg ctcaaacggt ttngtgnctt ttggcttttt gnatggcctt 480
taaangnncc 490

<210> 90

<211> 422

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> modified_base

<222> 1...422

<223> n=a, c, g, or t

<400> 90

aaaaaatggg aaaccatcac tcttgatgaa cttatgatca atccaggaga gacaacggtc 60

gtcaacngca ttcacggtt acaatacaacn cctgatgaaa ctgtgtcatt agactctcca 120
agagacacgg ttctgaagct attcagagat atcaatcctg acctctttgt gtttgacagag 180
attaacggaa tgtacaactc tcctttcttc atgacgaggt tccgagaagc gcttttncat 240
tacncttcac tctttgacat gtttgacacc acaatacacg gagaggatga gtacaaaaaac 300
aggtcactgt ttggagagag agttactttt gaganacgag nttgagcgtg attttcctgc 360
nngggnttca nancgggttt tnngggcctt aaaacctnca agaaatnggn ggtttggggtt 420
tt 422

<210> 91
<211> 234
<212> DNA
<213> Arabidopsis thaliana

<400> 91
aatcaatggt ttggttatat ttcattacta gcaaccacc cacaaccaca tgacaattta 60
caagagaaaa acaaccacca gggttggttt gtatacatat ataacttagg ttgtgttaca 120
acttaaaaca tcattgcaca tcctaaaaat ttcagcgacc agaattgtgtt tttgattgtg 180
cctctttctt tatccacctc aagtaaccat cattcactat aacttaccca atct 234

<210> 92
<211> 466
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...466
<223> n=a, c, g, or t


<400> 92
gcgaatgttg agatcttggg agcaatagct ggggaaacca gagtccacat tatcgatttt 60
aagattgcac agggatcaca atacatgttt ttaattcagg agcttgcgaa acgccctggg 120
gggccgccgt tgctgcgtgt nacgggtgtg gatgattcan agtccaccta tgctcgtggg 180
ggaggactca gcttggttagg tgagaggctt gcaactttgg cgagtcacg tgggtgtccc 240
tttnagtctt acgatgccat catgtctggg tgcaaggtgc agcgggaaca tctcgggttg 300
gaacctggct ttgctgttgt tgtgaacttc ccatatgtat tacaccacat gccagacgag 360
agcgttaagt tttgaaaatc acagngacag gcttctgcat ctnatcaana gcctttcccc 420
aaactggtac tctagtaggc aagattcaac acaacacttg catcna 466

<210> 93
<211> 534
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...534
<223> n=a, c, g, or t

<400> 93

atgnaacata tagcaaaaga tcatgcaatg agtactatat ctcttaggct acactcttac 60
acacgctatg tcacaagcat aatataacaa cattctagtg ttcaagaacc ctaactctga 120
acttaatcca ctogtggttg cgagagacta tcaacagaaa agccctacat aaatcccagt 180
cgcttagaac gtaaganaca acatctatga agacgaagga acccatagag atgaagcata 240
cacgattcta cctttccacc cttgaagtaa ccagttaccg ttttgatcaa catcgaagtt 300
tttatcgta cggttttcgg attttcaact tcagattctg catcagttcc ttctcaagcg 360
gnagctgtcc taaatccggg tcgggtcagt ctcggtcggc actggttata tggctctggg 420
ctctccactc tctctggtct tcacaaggca cancattcac aatctntttt ccataaaact 480
nnttttntn catnngnenn atnttggctt ccctnggntg gttgggggnc ncnt 534

 <210> 94
<211> 476
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...476
<223> n=a, c, g, or t

<400> 94

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ctttattaga tattaacgac tctggatttt tgggtttttg gagttggatc cacatgggtt 120
cttatccgga tggattccct ggatccatgg acgagttgga tttcaataag gactttgatt 180
tgccctccctc ctcaaaccaa accttaggtt tagctaattg gttctattta gatgacttag 240
atttctcact cttggatcct ccagaggcat atccctccca gaacaacanc aacaacatca 300
tcaacaacaa agctgtagca ggagatctgt tatcatcttc aactgaatga cgntggattc 360
tctgattctg ttttgagtat ataagccaag ttctnatggg agnnggtnat gnagagaagc 420
ctttgtatgt tcatgnngnt ttggtnatta agntgctngg aaannactcn ntnngc 476

<210> 95
<211> 3510

<212> DNA
<213> Zea mays

<220>
<221> CDS
<222> (293)..(1855)

<220>
<221> CDS
<222> (2703)..(3143)

<400> 95

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ccggactgac tgactgactg tgggtggtggt ggtgcatcag cagcccgcgc ggcgccaaaa 120
cacgcaaaact gctccctccc tcaactaccc ctatcccccg cgtggggtcg ccgcatcgcc 180
atgcgcgcgg cggttctctc ttggcgtttc tagatgggct cctcctctctc cctcctcttc 240
tctcgctect cctcgcgcgc atccacgcgc cccactcct ttccccactc tc atg cca 298
Met Pro
1

ccg cca ccg cct ccg cct cct ctc act cct tat tgc cgc cgc tgc cct 346
Pro Pro Pro 5 Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg Cys Pro
10 15

ccc cca cac ctc cct ccg cct cct cct tct tcc cca aac cac ttc ctc 394
Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His Phe Leu
20 25 30

ctc cac tac ctc cat cag cta gac cac caa gaa gcc gcc gcc gcc gcc 442
Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala Ala Ala
35 40 45 50

atg gtc cgc aag cgc ccc gcg tcc gac atg gac ctc ccg ccg ccg cgc 490
Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro Pro Arg
55 60 65

cgc cac gtc acg ggc gac ctc tcc gac gtc acg gcg gcc gct gcc gcc 538
Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala Ala Ala
70 75 80

ggt gtt ggt ggt agt ggc gcg ccg tcc tcc gcc agc gcg cag ctg ccc 586
Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln Leu Pro
85 90 95

gcg ctg ccc acc cag ctc cac cag ctg ccc ccc gcg ttc cag cac cac 634
Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln His His
100 105 110

gcg ccg gag gtg gac gtg ccc gcg cac ccg gcc ccg gcc gcc cac gcg 682
Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala His Ala
115 120 125 130

cag gcg ggc ggc gag gca acc gcg tcc acg acc gcg tgg gtg gac ggc 730
Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val Asp Gly
135 140 145

atc	atc	cgc	gac	atc	atc	ggg	agc	agc	ggc	ggc	gcc	gcg	gtc	tcc	atc	778
Ile	Ile	Arg	Asp	Ile	Ile	Gly	Ser	Ser	Gly	Gly	Ala	Ala	Val	Ser	Ile	
			150					155					160			
acg	cag	ctc	atc	cac	aac	gtc	cgc	gag	atc	atc	cac	ccc	tgc	aac	ccc	826
Thr	Gln	Leu	Ile	His	Asn	Val	Arg	Glu	Ile	Ile	His	Pro	Cys	Asn	Pro	
		165					170					175				
ggc	ctc	gcg	tcg	ctc	ctg	gag	ctc	cgc	ctc	cgc	tcc	ctc	ctc	gca	gcc	874
Gly	Leu	Ala	Ser	Leu	Leu	Glu	Leu	Arg	Leu	Arg	Ser	Leu	Leu	Ala	Ala	
	180					185					190					
gac	ccg	gcc	cca	ctg	ccg	ccg	ccg	ccg	cag	ccg	cag	cag	cat	gct	ctc	922
Asp	Pro	Ala	Pro	Leu	Pro	Pro	Pro	Pro	Gln	Pro	Gln	Gln	His	Ala	Leu	
195					200				205						210	
ctg	cac	ggc	gct	ccg	gcc	gcc	gct	ccc	gcg	ggg	ctg	acg	ctc	cct	ccc	970
Leu	His	Gly	Ala	Pro	Ala	Ala	Ala	Pro	Ala	Gly	Leu	Thr	Leu	Pro	Pro	
				215				220						225		
ccg	cca	ccg	ctt	ccg	gac	aag	cgc	cgc	cac	gag	cat	cca	ccg	ccg	tgc	1018
Pro	Pro	Pro	Leu	Pro	Asp	Lys	Arg	Arg	His	Glu	His	Pro	Pro	Pro	Cys	
			230				235						240			
cag	cag	caa	cag	cag	gag	gaa	ccg	cat	ccg	gcg	ccg	cag	tcg	ccc	aag	1066
Gln	Gln	Gln	Gln	Gln	Glu	Glu	Pro	His	Pro	Ala	Pro	Gln	Ser	Pro	Lys	
		245					250					255				
gcc	ccg	acc	gcg	gaa	gag	acc	gca	gcg	gcg	gcc	gcc	gcc	gca	caa	gca	1114
Ala	Pro	Thr	Ala	Glu	Glu	Thr	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Gln	Ala	
	260					265					270					
gca	gct	gct	gcg	gcc	gcc	aag	gag	cgg	aag	gag	gag	cag	cgg	cgg	aag	1162
Ala	Ala	Ala	Ala	Ala	Ala	Lys	Glu	Arg	Lys	Glu	Glu	Gln	Arg	Arg	Lys	
	275				280					285					290	
cag	cgc	gac	gag	gag	ggc	ctc	cac	ctg	ctg	acg	ctg	ctg	ctg	cag	tgc	1210
Gln	Arg	Asp	Glu	Glu	Gly	Leu	His	Leu	Leu	Thr	Leu	Leu	Leu	Gln	Cys	
			295					300						305		
gcc	gag	gcc	gtg	aac	gcg	gac	aac	ctg	gac	gac	gcg	cac	cag	acg	ctg	1258
Ala	Glu	Ala	Val	Asn	Ala	Asp	Asn	Leu	Asp	Asp	Ala	His	Gln	Thr	Leu	
			310				315						320			
ctg	gag	atc	gcg	gag	cta	gcg	acg	ccg	ttc	ggc	acc	tcg	acg	cag	cgc	1306
Leu	Glu	Ile	Ala	Glu	Leu	Ala	Thr	Pro	Phe	Gly	Thr	Ser	Thr	Gln	Arg	
		325					330					335				
gtg	gcc	gcc	tac	ttc	gcg	gag	gcc	atg	tcg	gcg	cgg	ctc	gtc	agc	tcc	1354
Val	Ala	Ala	Tyr	Phe	Ala	Glu	Ala	Met	Ser	Ala	Arg	Leu	Val	Ser	Ser	
	340					345					350					
tgc	ctg	ggc	ctg	tac	gcg	ccg	ctg	ccg	ccg	ggc	tcc	ccc	gcc	gcg	gcg	1402
Cys	Leu	Gly	Leu	Tyr	Ala	Pro	Leu	Pro	Pro	Gly	Ser	Pro	Ala	Ala	Ala	
	355				360					365					370	
cgc	ctc	cac	ggc	cgc	gtc	gcc	gcc	gcg	ttc	cag	gtg	ttc	aac	ggc	atc	1450
Arg	Leu	His	Gly	Arg	Val	Ala	Ala	Ala	Phe	Gln	Val	Phe	Asn	Gly	Ile	
			375						380					385		

agc ccc ttc gtc aag ttc tcg cac ttc acc gcc aac cag gcc atc cag 1498
 Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln
 390 395 400

gag gcg ttc gag cgg gag gag cgc gtg cac atc atc gac ctc gac atc 1546
 Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp Ile
 405 410 415

atg cag ggg ctg cag tgg ccg ggg ctc ttc cac atc ctt gcc tcc cgc 1594
 Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg
 420 425 430

ccc ggg gcg ccg ccc agg gtg agg ctc acc gcc ctc ggg gcg tcc atg 1642
 Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala Ser Met
 435 440 445 450

gag gcg ctc gag gcc acg ggg aag cgc ctc tcc gat ttc gcc gac acg 1690
 Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Thr
 455 460 465

ctc ggc ctg ccc ttc gag ttc tgc gcc gtc gcc gag aag gcc ggc aat 1738
 Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala Gly Asn
 470 475 480

gtt gac ccg gag aag cta ggg gtc acg agg cgg gag gcc gtc gcc gtc 1786
 Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val Ala Val
 485 490 495

cac tgg ctg cac cac tcg ctc tac gac gtc act gcc tcc gac tcc aac 1834
 His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ser Asn
 500 505 510

acg ctc tgg ctc atc caa agg taggaaggag tacaccatct ctogatcctg 1885
 Thr Leu Trp Leu Ile Gln Arg
 515 520

acttccttgc taccatgtca aatcttgatg caatcatggc cacttttcag ctactaacac 1945
 tttagtttag ccaatgogac atccagtaca actaatctaa aaaaataatc ttcagagggtt 2005
 tcctagtaaaa aaaaccgcgt ttttgagact caaaaagctt gtcattatga ccaaccaact 2065
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 ctggtagaga gagtatectc catggccttt gttgatccca gaaccacaaa agatagtatt 2185
 tcgctcgcat ttggttagtg gaggtgttct gatcatcact tggaggatgg agctgaaagt 2245
 tcctatcatc atgaccaact ttccatggca aaaggtttct agttccaagt ggcaggacga 2305
 tgattactga gtgactgaat ggagtaactg tcactttcta ccaactaacca tcatttatta 2365
 atacataaat catcatccgg agcctaaact cagaaaggct aatcaaaagt gcaatctttc 2425
 tcaaatggct gccatatgcc agtggtacat gcctggccat tgtacttttt cggtgaacca 2485
 tctcgtctca agcatgagat gaaggcctga actgcaatgt ccttgatttg atgcaaccat 2545
 tattagaaga aacgctaagc gatgccggtc ctggcaaggg caatgccata tcgtcagaca 2605
 gacagggatt cggaatcgaa tggctagctg gtgacaaatc gcacggggat taataaacta 2665

cattgggtcat tgattccatc cccacacac ctgcagg ctg gcc ccc aag gtg gtg 2720
Leu Ala Pro Lys Val Val
525

aca atg gtg gag cag gac ctg agc cac tcg ggc tcc ttc ctg gcg cgc 2768
Thr Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg
530 535 540

ttc gtg gag gcc atc cac tac tac tcg gcg ctg ttc gac tcg ctg gac 2816
Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp
545 550 555

gcg agc tac ggc gag gac agc ccc gag cgg cac gtc gtg gag cag cag 2864
Ala Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln
560 565 570 575

ctg ctg tcg cgg gag atc cgc aac gtg ctg gcc gtg ggc ggg ccg gcc 2912
Leu Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala
580 585 590

cgc acc ggc gac gtc aag ttc ggc agc tgg cgc gag aag ctg gcg cag 2960
Arg Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln
595 600 605

tcc ggg ttc cgc gcc gcc tcg ctc gcc ggc agc gcc gcg gcg cag gcg 3008
Ser Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala
610 615 620

tcc ctg ctg ctc ggc atg ttc ccc tcc gac ggg tac acg ctg gtg gag 3056
Ser Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu
625 630 635

gag aac ggc gcg ctg aag ctc ggg tgg aag gac ctc tgc ctg ctc acc 3104
Glu Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr
640 645 650 655

gcg tcg gcc tgg cgc ccc atc cag gtg ccg ccg tgc cgt tgatgagacc 3153
Ala Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
660 665

tctgcctgct cctgcttgcg ttgagaggcc gccactccac ttgttttgca tctgtagctg 3213

ctcgggtttgg tcatcagctg ggagataaga aaagcggaaa cgtactaatt gctctggagt 3273

agatccatcc attcacagtg atagttactg atgtactaag ctttaattag ttcaatgcta 3333

gatcgttctt gttcaggtgt cgatcgcgta tccttgctct tgggtctcctt ttcattttgg 3393

tgctttgtct agtcgctttc ccgactaatg ccgtgctctt catgcgcggt ctagtgaaga 3453

ttcttgccga gaatattagc atagttttca tgtaaagtag ccatcaagca agtatta 3510

<210> 96
<211> 668
<212> PRT
<213> Zea mays

<400> 96
Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
1 5 10 15

Cys Pro Pro Pro His Leu Pro Pro Pro Pro Ser Ser Pro Asn His
 20 25 30
 Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
 35 40 45
 Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
 50 55 60
 Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
 65 70 75 80
 Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
 85 90 95
 Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
 100 105 110
 His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
 115 120 125
 His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
 130 135 140
 Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
 145 150 155 160
 Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
 165 170 175
 Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
 180 185 190
 Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Gln Pro Gln Gln His
 195 200 205
 Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
 210 215 220
 Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
 225 230 235 240
 Pro Cys Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
 245 250 255
 Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala
 260 265 270
 Gln Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
 275 280 285
 Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
 290 295 300
 Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
 305 310 315 320
 Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
 325 330 335
 Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
 340 345 350
 Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
 355 360 365
 Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
 370 375 380
 Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
 385 390 395 400
 Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
 405 410 415
 Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
 420 425 430
 Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
 435 440 445
 Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
 450 455 460
 Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
 465 470 475 480
 Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
 485 490 495
 Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
 500 505 510

Ser Asn Thr Leu Trp Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr
 515 520 525
 Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe
 530 535 540
 Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala
 545 550 555 560
 Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln Leu
 565 570 575
 Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg
 580 585 590
 Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser
 595 600 605
 Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser
 610 615 620
 Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu
 625 630 635 640
 Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala
 645 650 655
 Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
 660 665

<210> 97
 <211> 521
 <212> PRT
 <213> Zea mays

<400> 97

Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
 1 5 10 15
 Cys Pro Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His
 20 25 30
 Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
 35 40 45
 Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
 50 55 60
 Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
 65 70 75 80
 Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
 85 90 95
 Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
 100 105 110
 His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
 115 120 125
 His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
 130 135 140
 Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
 145 150 155 160
 Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
 165 170 175

Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
 180 185 190
 Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His
 195 200 205
 Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
 210 215 220
 Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
 225 230 235 240
 Pro Cys Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
 245 250 255
 Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala
 260 265 270
 Gln Ala Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
 275 280 285
 Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
 290 295 300
 Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
 305 310 315 320
 Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
 325 330 335
 Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
 340 345 350
 Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
 355 360 365
 Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
 370 375 380
 Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
 385 390 395 400
 Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
 405 410 415
 Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
 420 425 430
 Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
 435 440 445
 Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
 450 455 460
 Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
 465 470 475 480
 Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
 485 490 495
 Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
 500 505 510

Ser Asn Thr Leu Trp Leu Ile Gln Arg
515 520

<210> 98
<211> 147
<212> PRT
<213> Zea mays

<400> 98

Leu Ala Pro Lys Val Val Thr Met Val Glu Gln Asp Leu Ser His Ser
1 5 10 15

Gly Ser Phe Leu Ala Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala
20 25 30

Leu Phe Asp Ser Leu Asp Ala Ser Tyr Gly Glu Asp Ser Pro Glu Arg
35 40 45

His Val Val Glu Gln Gln Leu Leu Ser Arg Glu Ile Arg Asn Val Leu
50 55 60

Ala Val Gly Gly Pro Ala Arg Thr Gly Asp Val Lys Phe Gly Ser Trp
65 70 75 80

Arg Glu Lys Leu Ala Gln Ser Gly Phe Arg Ala Ala Ser Leu Ala Gly
85 90 95

Ser Ala Ala Ala Gln Ala Ser Leu Leu Gly Met Phe Pro Ser Asp
100 105 110

Gly Tyr Thr Leu Val Glu Glu Asn Gly Ala Leu Lys Leu Gly Trp Lys
115 120 125

Asp Leu Cys Leu Leu Thr Ala Ser Ala Trp Arg Pro Ile Gln Val Pro
130 135 140

Pro Cys Arg
145

<210> 99
<211> 668
<212> PRT
<213> Zea mays

<400> 99

Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
1 5 10 15

Cys Pro Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His
20 25 30

Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
35 40 45

Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
50 55 60

Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
 65 70 75 80
 Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
 85 90 95
 Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
 100 105 110
 His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
 115 120 125
 His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
 130 135 140
 Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
 145 150 155 160
 Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
 165 170 175
 Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
 180 185 190
 Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His
 195 200 205
 Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
 210 215 220
 Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
 225 230 235 240
 Pro Cys Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
 245 250 255
 Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala
 260 265 270
 Gln Ala Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
 275 280 285
 Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
 290 295 300
 Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
 305 310 315 320
 Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
 325 330 335
 Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
 340 345 350
 Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
 355 360 365
 Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
 370 375 380

Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
 385 390 395 400
 Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
 405 410 415
 Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
 420 425 430
 Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
 435 440 445
 Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
 450 455 460
 Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
 465 470 475 480
 Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
 485 490 495
 Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
 500 505 510
 Ser Asn Thr Leu Trp Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr
 515 520 525
 Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe
 530 535 540
 Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala
 545 550 555 560
 Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln Leu
 565 570 575
 Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg
 580 585 590
 Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser
 595 600 605
 Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser
 610 615 620
 Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu
 625 630 635 640
 Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala
 645 650 655
 Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
 660 665

<210> 100
 <211> 653
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 100

Met Ala Glu Ser Gly Asp Phe Asn Gly Gly Gln Pro Pro Pro His Ser
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 Pro Leu Arg Thr Thr Ser Ser Gly Ser Ser Ser Asn Asn Arg Gly
 20 25 30
 Pro Pro Pro Pro Pro Pro Pro Leu Val Met Val Arg Lys Arg Leu
 35 40 45
 Ala Ser Glu Met Ser Ser Asn Pro Asp Tyr Asn Asn Ser Ser Arg Pro
 50 55 60
 Pro Arg Arg Val Ser His Leu Leu Asp Ser Asn Tyr Asn Thr Val Thr
 65 70 75 80
 Pro Gln Gln Pro Pro Ser Leu Thr Ala Ala Thr Val Ser Ser Gln
 85 90 95
 Pro Asn Pro Pro Leu Ser Val Cys Gly Phe Ser Gly Leu Pro Val Phe
 100 105 110
 Pro Ser Asp Arg Gly Gly Arg Asn Val Met Met Ser Val Gln Pro Met
 115 120 125
 Asp Gln Asp Ser Ser Ser Ser Ser Ala Ser Pro Thr Val Trp Val Asp
 130 135 140
 Ala Ile Ile Arg Asp Leu Ile His Ser Ser Thr Ser Val Ser Ile Pro
 145 150 155 160
 Gln Leu Ile Gln Asn Val Arg Asp Ile Ile Phe Pro Cys Asn Pro Asn
 165 170 175
 Leu Gly Ala Leu Leu Glu Tyr Arg Leu Arg Ser Leu Met Leu Leu Asp
 180 185 190
 Pro Ser Ser Ser Ser Asp Pro Ser Pro Gln Thr Phe Glu Pro Leu Tyr
 195 200 205
 Gln Ile Ser Asn Asn Pro Ser Pro Pro Gln Gln Gln Gln Gln His Gln
 210 215 220
 Gln Gln Gln Gln Gln His Lys Pro Pro Pro Pro Pro Ile Gln Gln Gln
 225 230 235 240
 Glu Arg Glu Asn Ser Ser Thr Asp Ala Pro Pro Gln Pro Glu Thr Val
 245 250 255
 Thr Ala Thr Val Pro Ala Val Gln Thr Asn Thr Ala Glu Ala Leu Arg
 260 265 270
 Glu Arg Lys Glu Glu Ile Lys Arg Gln Lys Gln Asp Glu Glu Gly Leu
 275 280 285
 His Leu Leu Thr Leu Leu Leu Gln Cys Ala Glu Ala Val Ser Ala Asp
 290 295 300
 Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser Gln Leu Ser
 305 310 315 320
 Thr Pro Tyr Gly Thr Ser Ala Gln Arg Val Ala Ala Tyr Phe Ser Glu
 325 330 335

Ala Met Ser Ala Arg Leu Leu Asn Ser Cys Leu Gly Ile Tyr Ala Ala
 340 345 350
 Leu Pro Ser Arg Trp Met Pro Gln Thr His Ser Leu Lys Met Val Ser
 355 360 365
 Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Lys Phe Ser His
 370 375 380
 Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Lys Glu Asp Ser
 385 390 395 400
 Val His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu Gln Trp Pro Gly
 405 410 415
 Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly Pro Pro His Val Arg
 420 425 430
 Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu Gln Ala Thr Gly Lys
 435 440 445
 Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu Pro Phe Glu Phe Cys
 450 455 460
 Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg Leu Asn Val
 465 470 475 480
 Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His Ser Leu Tyr
 485 490 495
 Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu Gln Arg Leu
 500 505 510
 Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser His Ala Gly
 515 520 525
 Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu
 530 535 540
 Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu Glu Arg His
 545 550 555 560
 Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile Arg Asn Val Leu Ala
 565 570 575
 Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu Ser Trp Arg
 580 585 590
 Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu Ala Gly Asn
 595 600 605
 Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro Ser Asp Gly
 610 615 620
 Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys Leu Gly Trp Lys Asp
 625 630 635 640
 Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro Arg Ser
 645 650

<210> 101
 <211> 295
 <212> PRT
 <213> Zea mays

<400> 101

Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Phe
 1 5 10 15
 Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe
 20 25 30
 Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp Ile Met Gln Gly
 35 40 45
 Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly
 50 55 60
 Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala Ser Met Glu Ala Leu
 65 70 75 80
 Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Thr Leu Gly Leu
 85 90 95
 Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala Gly Asn Val Asp Pro
 100 105 110
 Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val Ala Val His Trp Leu
 115 120 125
 His His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ser Asn Thr Leu Trp
 130 135 140
 Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr Met Val Glu Gln Asp
 145 150 155 160
 Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe Val Glu Ala Ile His
 165 170 175
 Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala Ser Tyr Gly Glu Asp
 180 185 190
 Ser Pro Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Arg Glu Ile
 195 200 205
 Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg Thr Gly Asp Val Lys
 210 215 220
 Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser Gly Phe Arg Ala Ala
 225 230 235 240
 Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser Leu Leu Leu Gly Met
 245 250 255
 Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu Asn Gly Ala Leu Lys
 260 265 270
 Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala Ser Ala Trp Arg Pro
 275 280 285

Ile Gln Val Pro Pro Cys Arg
 290 295

<210> 102
 <211> 308
 <212> PRT
 <213> Zea mays

<400> 102

Arg Arg Val Ala Val Ala Phe Gln Ala Tyr Asn Ala Leu Ser Pro Leu
 1 5 10 15
 Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Leu Gln Ala Leu
 20 25 30
 Asp Gly Glu Asp Cys Leu His Val Ile Asp Leu Asp Ile Met Gln Gly
 35 40 45
 Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Arg Lys
 50 55 60
 Pro Arg Ser Leu Arg Ile Thr Gly Leu Gly Ala Ser Leu Asp Val Leu
 65 70 75 80
 Glu Ala Thr Gly Arg Arg Leu Ala Asp Phe Ala Ala Ser Leu Gly Leu
 85 90 95
 Pro Phe Glu Phe Arg Pro Ile Glu Gly Lys Ile Gly His Val Ala Asp
 100 105 110
 Ala Ala Ala Leu Leu Gly Ser Arg Gln Arg Arg Arg Asp Asp Glu Ala
 115 120 125
 Thr Val Val His Trp Met His His Cys Leu Tyr Asp Val Thr Gly Ser
 130 135 140
 Asp Val Gly Thr Val Arg Leu Leu Arg Ser Leu Arg Pro Lys Leu Ile
 145 150 155 160
 Thr Ile Val Glu Gln Asp Leu Gly His Ser Gly Asp Phe Leu Gly Arg
 165 170 175
 Phe Val Glu Ala Leu His Tyr Tyr Ser Ala Leu Phe Asp Ala Leu Gly
 180 185 190
 Asp Gly Ala Gly Ala Ala Glu Glu Glu Ser Ala Glu Arg Tyr Ala Val
 195 200 205
 Glu Arg Gln Leu Leu Gly Ala Glu Ile Arg Asn Ile Val Ala Val Gly
 210 215 220
 Gly Pro Lys Arg Thr Gly Glu Val Arg Val Glu Arg Trp Ser His Glu
 225 230 235 240
 Leu Arg His Ala Gly Phe Arg Pro Val Ser Leu Ala Gly Ser Pro Ala
 245 250 255
 Ala Gln Ala Arg Leu Leu Leu Gly Met Tyr Pro Trp Lys Gly Tyr Thr
 260 265 270

Leu Val Glu Glu Asp Ala Cys Leu Lys Leu Gly Trp Lys Asp Leu Ser
 275 280 285

Leu Leu Thr Ala Ser Ala Trp Glu Pro Ala Asp Asp Ala Ala Ala Ser
 290 295 300

Ala Pro Thr Gly
 305

<210> 103
 <211> 290
 <212> PRT
 <213> Arabidopsis thaliana

<400> 103

Leu Lys Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu
 1 5 10 15

Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe
 20 25 30

Glu Lys Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile Met Gln Gly
 35 40 45

Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly
 50 55 60

Pro Pro His Val Arg Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu
 65 70 75 80

Gln Ala Thr Gly Lys Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu
 85 90 95

Pro Phe Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr
 100 105 110

Glu Arg Leu Asn Val Arg Lys Arg Glu Ala Val Ala Val His Trp Leu
 115 120 125

Gln His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp
 130 135 140

Leu Leu Gln Arg Leu Ala Pro Lys Val Val Thr Val Val Glu Gln Asp
 145 150 155 160

Leu Ser His Ala Gly Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His
 165 170 175

Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu
 180 185 190

Ser Glu Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile
 195 200 205

Arg Asn Val Leu Ala Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys
 210 215 220

Phe Glu Ser Trp Arg Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile
 225 230 235 240

Handwritten: D. conf.

Ser Leu Ala Gly Asn Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met
 245 250 255
 Phe Pro Ser Asp Gly Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys
 260 265 270
 Leu Gly Trp Lys Asp Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro
 275 280 285
 Arg Ser
 290

<210> 104
 <211> 969
 <212> DNA
 <213> Zea mays

<400> 104

gcgggccgcgc agagccgcgc cgtggcggtg gcgttccagg cgtacaacgc gctgtcgccg 60
 ctcgtaagt tctcgactt caccggcaac caggccatcc tgcaggcgct cgacggcgag 120
 gactgcctcc acgtgatcga cctggacatc atgcagggcc tgcagtggcc ggggctcttc 180
 cacatcctcg cgtcccgcgc gcgcaagccg cggtcgctcc ggatcaccgg gctcggcgcg 240
 tcgctcgacg tcctcgaggc cactggccgc cgcctcgccg acttcgcggc ctcgctcggc 300
 ctcccgttcg agttccgcgc catcgagggg aagatcgggc acgtcgccga cgccgcggcg 360
 ctctcggtc cgcgccagcg gcggcgggat gacgaggcca ccgtggtgca ctggatgcac 420
 cactgcctct atgacgtgac ggggtcggac gtgggcacgg tgcggctgct ccggagcctg 480
 cgcccgaagc tgatcaccat cgtggagcag gacctgggcc acagcggcga ttctctgggc 540
 cggttcgtgg aggcgctgca ctactactcg gcgctgttcg acgcgctggg agacggcgcc 600
 ggcgcggccg aggaggagtc ggccgagcgg tacgcggttg agcgacagct cctgggcgcg 660
 gagatacgca acatcggtgg cgtagggggg cccaagcggg caggggaggt gcgcgtggag 720
 cgggtggagcc acgaactgog gcacgcccgg ttccggccag tgtccctggc cgggagccct 780
 gccgcgcagg ccaggctgct cctcggcatt tatccgtgga aggggtacac gctggtggag 840
 gaggacgcgt gccttaagct gggctggaag gacctctccc tgctcaccgc gtcggcggtg 900
 gagccggcgg acgacgctgc cgcttctgcg ccacccggtt aacgagtacg agcggacgcg 960
 tgggtcgac 969

<210> 105
 <211> 323
 <212> PRT
 <213> Zea mays

<220>

<221> SITE
 <222> 1...323
 <223> Xaa=unknown amino acid

<400> 105

Ala	Ala	Ala	Gln	Ser	Arg	Arg	Val	Ala	Val	Ala	Phe	Gln	Ala	Tyr	Asn	1	5	10	15
Ala	Leu	Ser	Pro	Leu	Val	Lys	Phe	Ser	His	Phe	Thr	Ala	Asn	Gln	Ala	20	25	30	
Ile	Leu	Gln	Ala	Leu	Asp	Gly	Glu	Asp	Cys	Leu	His	Val	Ile	Asp	Leu	35	40	45	
Asp	Ile	Met	Gln	Gly	Leu	Gln	Trp	Pro	Gly	Leu	Phe	His	Ile	Leu	Ala	50	55	60	
Ser	Arg	Pro	Arg	Lys	Pro	Arg	Ser	Leu	Arg	Ile	Thr	Gly	Leu	Gly	Ala	65	70	75	80
Ser	Leu	Asp	Val	Leu	Glu	Ala	Thr	Gly	Arg	Arg	Leu	Ala	Asp	Phe	Ala	85	90	95	
Ala	Ser	Leu	Gly	Leu	Pro	Phe	Glu	Phe	Arg	Pro	Ile	Glu	Gly	Lys	Ile	100	105	110	
Gly	His	Val	Ala	Asp	Ala	Ala	Ala	Leu	Leu	Gly	Ser	Arg	Gln	Arg	Arg	115	120	125	
Arg	Asp	Asp	Glu	Ala	Thr	Val	Val	His	Trp	Met	His	His	Cys	Leu	Tyr	130	135	140	
Asp	Val	Thr	Gly	Ser	Asp	Val	Gly	Thr	Val	Arg	Leu	Leu	Arg	Ser	Leu	145	150	155	160
Arg	Pro	Lys	Leu	Ile	Thr	Ile	Val	Glu	Gln	Asp	Leu	Gly	His	Ser	Gly	165	170	175	
Asp	Phe	Leu	Gly	Arg	Phe	Val	Glu	Ala	Leu	His	Tyr	Tyr	Ser	Ala	Leu	180	185	190	
Phe	Asp	Ala	Leu	Gly	Asp	Gly	Ala	Gly	Ala	Ala	Glu	Glu	Glu	Ser	Ala	195	200	205	
Glu	Arg	Tyr	Ala	Val	Glu	Arg	Gln	Leu	Leu	Gly	Ala	Glu	Ile	Arg	Asn	210	215	220	
Ile	Val	Ala	Val	Gly	Gly	Pro	Lys	Arg	Thr	Gly	Glu	Val	Arg	Val	Glu	225	230	235	240
Arg	Trp	Ser	His	Glu	Leu	Arg	His	Ala	Gly	Phe	Arg	Pro	Val	Ser	Leu	245	250	255	
Ala	Gly	Ser	Pro	Ala	Ala	Gln	Ala	Arg	Leu	Leu	Leu	Gly	Met	Tyr	Pro	260	265	270	
Trp	Lys	Gly	Tyr	Thr	Leu	Val	Glu	Glu	Asp	Ala	Cys	Leu	Lys	Leu	Gly	275	280	285	
Trp	Lys	Asp	Leu	Ser	Leu	Leu	Thr	Ala	Ser	Ala	Trp	Glu	Pro	Ala	Asp	290	295	300	

Asp Ala Ala Ala Ser Ala Pro Thr Gly Xaa Arg Val Arg Ala Asp Ala
305 310 315 320

Trp Val Asp

<210> 106
<211> 352
<212> PRT
<213> Zea mays

<400> 106

Leu Ser Met Val Asn Glu Leu Arg Gln Ile Val Ser Ile Gln Gly Asp
1 5 10 15
Pro Ser Gln Arg Ile Ala Ala Tyr Met Val Glu Gly Leu Ala Ala Arg
20 25 30
Met Ala Ala Ser Gly Lys Phe Ile Tyr Arg Ala Leu Lys Cys Lys Glu
35 40 45
Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
50 55 60
Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
65 70 75 80
Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
85 90 95
Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
100 105 110
Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
115 120 125
Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Gly Leu Arg Leu
130 135 140
Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
145 150 155 160
Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
165 170 175
Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
180 185 190
Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
195 200 205
Val Lys Ser Leu Asn Pro Lys Leu Val Thr Val Val Glu Gln Asp Val
210 215 220
Asn Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu
225 230 235 240
Tyr Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu
245 250 255

Ser Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile
260 265 270
Val Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu
275 280 285
Ala Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro
290 295 300
Lys Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys
305 310 315 320
Gln Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu
325 330 335
His Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
340 345 350

<210> 107
<211> 325
<212> PRT
<213> Zea mays

<400> 107

Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
1 5 10 15
Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
20 25 30
Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
35 40 45
Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
50 55 60
Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65 70 75 80
Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
85 90 95
Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
100 105 110
Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val Asp
115 120 125
Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
130 135 140
Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145 150 155 160
Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
165 170 175

Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
 180 185 190
 Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
 195 200 205
 Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
 210 215 220
 Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
 225 230 235 240
 Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
 245 250 255
 His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
 260 265 270
 Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
 275 280 285
 Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
 290 295 300
 Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
 305 310 315 320
 Trp Arg Cys Arg Lys
 325

<210> 108
 <211> 306
 <212> PRT
 <213> Arabidopsis thaliana

<400> 108

Gly Thr Ser Pro Thr Gly Pro Glu Leu Leu Thr Tyr Met His Ile Leu
 1 5 10 15
 Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu Ser Ala Asn Gly
 20 25 30
 Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp
 35 40 45
 Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu
 50 55 60
 Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile Asp
 65 70 75 80
 Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu Glu Leu Val Gly
 85 90 95
 Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val Pro Phe Glu Phe
 100 105 110
 His Gly Ala Ala Leu Phe Cys Thr Glu Val Glu Ile Glu Lys Leu Gly
 115 120 125

Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro Leu Val Leu His
 130 135 140
 His Met Pro Asp Glu Ser Val Thr Val Glu Asn His Arg Asp Arg Leu
 145 150 155 160
 Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val Thr Leu Val Glu
 165 170 175
 Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro Arg Phe Val Glu
 180 185 190
 Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile Asp Val Lys Leu
 195 200 205
 Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln His Cys Leu Ala
 210 215 220
 Arg Glu Val Glu Asn Leu Ile Ala Cys Glu Gly Val Glu Arg Glu Glu
 225 230 235 240
 Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe His Met Ala Gly
 245 250 255
 Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala Thr Ile Lys Gly
 260 265 270
 Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu Glu Arg Asp Gly
 275 280 285
 Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile Thr Ser Cys Ala
 290 295 300
 Trp Arg
 305

<210> 109
 <211> 378
 <212> PRT
 <213> Arabidopsis thaliana

<400> 109

Ala Ala Ile Phe Tyr Gly His His His His Thr Pro Pro Pro Ala Lys
 1 5 10 15
 Arg Leu Asn Pro Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala
 20 25 30
 Ala Glu Val Ile Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala
 35 40 45
 Arg Leu Asn Gln Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg
 50 55 60
 Ala Ala Phe Tyr Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val
 65 70 75 80
 Ser Gln Thr Leu Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr
 85 90 95

Lys Ser Phe Ser Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr
 100 105 110
 Ser Asn Gln Ala Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His
 115 120 125
 Ile Ile Asp Phe Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met
 130 135 140
 Gln Glu Leu Val Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile
 145 150 155 160
 Thr Val Phe Ala Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe
 165 170 175
 Thr Gln Asp Asn Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu
 180 185 190
 Asp Ile Gln Val Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro
 195 200 205
 Asn Ser Ser Glu Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser
 210 215 220
 Phe Ser His Leu Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro
 225 230 235 240
 Thr Ile Ile Val Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro
 245 250 255
 Phe Ser Gln Gln Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe
 260 265 270
 Glu Ser Leu Asp Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile
 275 280 285
 Glu Arg Phe Leu Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg
 290 295 300
 Ser Arg Pro Ile Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu
 305 310 315 320
 Gln Met Gly Phe Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln
 325 330 335
 Ala Glu Cys Leu Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu
 340 345 350
 Lys Lys His Asn Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val
 355 360 365
 Gly Val Ser Ala Trp Arg Cys Arg Ser Ser
 370 375

<210> 110
 <211> 189
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 110

Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
 1 5 10 15
 Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp
 20 25 30
 Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
 35 40 45
 Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
 50 55 60
 Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
 65 70 75 80
 Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Cys Glu Arg
 85 90 95
 Arg Asp Glu Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
 100 105 110
 Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
 115 120 125
 Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
 130 135 140
 Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
 145 150 155 160
 Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
 165 170 175
 Lys Pro Ala Glu Lys Phe Thr Asn Asn Asn Leu Asn Ile
 180 185

<210> 111
 <211> 284
 <212> PRT
 <213> Arabidopsis thaliana

<400> 111

Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
 1 5 10 15
 Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
 20 25 30
 Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
 35 40 45
 Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
 50 55 60
 Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
 65 70 75 80
 Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
 85 90 95

His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
 100 105 110
 Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
 115 120 125
 Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
 130 135 140
 Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
 145 150 155 160
 Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
 165 170 175
 Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
 180 185 190
 Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
 195 200 205
 Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
 210 215 220
 Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
 225 230 235 240
 Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
 245 250 255
 His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
 260 265 270
 Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly
 275 280

<210> 112
 <211> 808
 <212> PRT
 <213> Arabidopsis thaliana
 <220>
 <221> SITE
 <222> 1...808
 <223> Xaa=unknown amino acid
 <400> 112

Leu Leu Lys Val Leu Leu Cys His Leu Val Ala Glu Ser Thr Lys Arg
 1 5 10 15
 Arg Ile Lys Ile Arg Pro Leu Leu Asp Ile Asn Asp Ser Gly Phe Leu
 20 25 30
 Gly Phe Trp Ser Trp Ile His Met Gly Ser Tyr Pro Asp Gly Phe Pro
 35 40 45
 Gly Ser Met Asp Glu Leu Asp Phe Asn Lys Asp Phe Asp Leu Pro Pro
 50 55 60

Ser Ser Asn Gln Thr Leu Gly Leu Ala Asn Gly Phe Tyr Leu Asp Asp
 65 70 75 80
 Leu Asp Phe Ser Ser Leu Asp Pro Pro Glu Ala Tyr Pro Ser Gln Asn
 85 90 95
 Asn Asn Asn Asn Asn Ile Asn Asn Lys Ala Val Ala Gly Asp Leu Leu
 100 105 110
 Ser Ser Ser Ser Asp Asp Ala Asp Phe Ser Asp Ser Val Leu Lys Tyr
 115 120 125
 Ile Ser Gln Val Leu Met Glu Glu Asp Met Glu Glu Lys Pro Cys Met
 130 135 140
 Phe His Asp Ala Leu Ala Leu Gln Ala Ala Glu Lys Ser Leu Tyr Glu
 145 150 155 160
 Ala Leu Gly Glu Lys Asp Pro Ser Ser Ser Ser Ala Ser Ser Val Asp
 165 170 175
 His Pro Glu Arg Leu Ala Ser His Ser Pro Asp Gly Ser Cys Ser Gly
 180 185 190
 Gly Ala Phe Ser Asp Tyr Ala Ser Thr Thr Thr Thr Thr Ser Ser Asp
 195 200 205
 Ser His Trp Ser Val Asp Gly Leu Glu Asn Arg Pro Ser Trp Leu His
 210 215 220
 Thr Pro Met Pro Ser Asn Phe Val Phe Gln Ser Thr Ser Arg Ser Asn
 225 230 235 240
 Ser Val Thr Gly Gly Gly Gly Gly Gly Asn Ser Ala Val Tyr Gly Ser
 245 250 255
 Gly Phe Gly Asp Asp Leu Val Ser Asn Met Phe Lys Asp Asp Glu Leu
 260 265 270
 Ala Met Gln Phe Lys Lys Gly Val Glu Glu Ala Ser Lys Phe Leu Pro
 275 280 285
 Lys Ser Ser Gln Leu Phe Ile Asp Val Asp Ser Tyr Ile Pro Met Asn
 290 295 300
 Ser Gly Ser Lys Glu Asn Gly Ser Glu Val Phe Val Lys Thr Glu Lys
 305 310 315 320
 Lys Asp Glu Thr Glu His His His His His Ser Tyr Ala Pro Pro Pro
 325 330 335
 Asn Arg Leu Thr Gly Lys Lys Ser His Trp Arg Asp Glu Asp Glu Asp
 340 345 350
 Phe Val Glu Glu Arg Ser Asn Lys Gln Ser Ala Val Tyr Val Glu Glu
 355 360 365
 Ser Glu Leu Ser Glu Met Phe Asp Asn Met Phe Leu Cys Gly Pro Gly
 370 375 380
 Lys Pro Val Cys Ile Leu Asn Gln Asn Phe Pro Thr Glu Ser Ala Lys
 385 390 395 400

Val Val Thr Ala Gln Ser Asn Gly Ala Lys Ile Arg Gly Lys Lys Ser
 405 410 415
 Thr Ser Thr Ser His Ser Asn Asp Ser Lys Lys Glu Thr Ala Asp Leu
 420 425 430
 Arg Thr Leu Leu Val Leu Cys Ala Gln Ala Val Ser Val Asp Asp Arg
 435 440 445
 Arg Thr Ala Asn Val Xaa Leu Arg Gln Ile Arg Glu His Ser Ser Pro
 450 455 460
 Leu Gly Asn Gly Ser Glu Arg Leu Ala His Tyr Phe Ala Asn Ser Leu
 465 470 475 480
 Glu Ala Arg Leu Ala Gly Thr Gly Thr Gln Ile Tyr Thr Ala Leu Ser
 485 490 495
 Ser Lys Lys Thr Ser Ala Ala Asp Met Leu Lys Ala Tyr Gln Thr Tyr
 500 505 510
 Met Ser Val Cys Pro Phe Lys Lys Ala Ala Ile Ile Phe Ala Asn His
 515 520 525
 Ser Met Met Arg Phe Thr Ala Asn Ala Asn Thr Ile His Ile Ile Asp
 530 535 540
 Phe Gly Ile Ser Tyr Gly Phe Gln Trp Pro Ala Leu Ile His Arg Leu
 545 550 555 560
 Ser Leu Ser Arg Pro Gly Gly Ser Pro Lys Leu Arg Ile Thr Gly Ile
 565 570 575
 Glu Leu Pro Gln Arg Gly Phe Arg Pro Ala Glu Glu Phe Arg Arg Gln
 580 585 590
 Val Ile Ala Trp Leu Asp Thr Val Ser Asp Thr Met Phe Arg Leu Ser
 595 600 605
 Thr Thr Gln Leu Leu Arg Asn Gly Glu Thr Ile Gln Val Glu Asp Leu
 610 615 620
 Lys Leu Arg Gln Gly Glu Tyr Val Val Val Asn Ser Leu Phe Arg Phe
 625 630 635 640
 Arg Asn Leu Leu Asp Glu Thr Val Leu Val Asn Ser Pro Arg Asp Ala
 645 650 655
 Val Leu Lys Leu Ile Arg Lys Ile Asn Pro Asn Val Phe Ile Pro Ala
 660 665 670
 Ile Leu Ser Gly Asn Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg
 675 680 685
 Glu Ala Leu Phe His Tyr Ser Ala Val Phe Asp Met Cys Asp Ser Lys
 690 695 700
 Leu Ala Arg Glu Asp Glu Met Arg Leu Met Tyr Val Phe Glu Phe Tyr
 705 710 715 720

Gly Arg Glu Ile Val Asn Val Val Ala Ser Glu Gly Thr Glu Arg Val
 725 730 735
 Glu Ser Arg Glu Thr Tyr Lys Gln Trp Gln Ala Arg Leu Ile Arg Ala
 740 745 750
 Gly Phe Arg Gln Leu Pro Leu Glu Lys Glu Leu Met Gln Asn Leu Lys
 755 760 765
 Leu Lys Ile Glu Asn Gly Tyr Asp Lys Asn Phe Asp Val Asp Gln Asn
 770 775 780
 Gly Asn Trp Leu Leu Gln Gly Trp Lys Gly Arg Ile Val Tyr Ala Ser
 785 790 795 800
 Ser Leu Trp Val Pro Ser Ser Ser
 805

<210> 113
 <211> 377
 <212> PRT
 <213> Arabidopsis thaliana

<400> 113
 Glu Val Val Asp Leu Arg Ser Leu Leu Ile His Cys Ala Gln Ala Val
 1 5 10 15
 Ala Ala Asp Asp Arg Arg Cys Ala Gly Gln Leu Leu Lys Gln Ile Arg
 20 25 30
 Leu His Ser Thr Pro Phe Gly Asp Gly Asn Gln Arg Leu Ala His Cys
 35 40 45
 Phe Ala Asn Gly Leu Glu Ala Arg Leu Ala Gly Thr Gly Ser Gln Ile
 50 55 60
 Tyr Lys Gly Ile Val Ser Lys Pro Arg Ser Ala Ala Val Leu Lys
 65 70 75 80
 Ala His Gln Leu Phe Leu Ala Cys Cys Pro Phe Arg Lys Leu Ser Tyr
 85 90 95
 Phe Ile Thr Asn Lys Thr Ile Arg Asp Leu Val Gly Asn Ser Gln Arg
 100 105 110
 Val His Val Ile Asp Phe Gly Ile Leu Tyr Gly Phe Gln Trp Pro Thr
 115 120 125
 Leu Ile His Arg Phe Ser Met Tyr Gly Ser Pro Lys Val Arg Ile Thr
 130 135 140
 Gly Ile Glu Phe Pro Gln Pro Gly Phe Arg Pro Ala Gln Arg Val Glu
 145 150 155 160
 Glu Thr Gly Gln Arg Leu Ala Ala Tyr Ala Lys Leu Phe Gly Val Pro
 165 170 175
 Phe Glu Tyr Lys Ala Ile Ala Lys Lys Trp Asp Ala Ile Gln Leu Glu
 180 185 190
 Asp Leu Asp Ile Asp Arg Asp Glu Ile Thr Val Val Asn Cys Leu Tyr
 195 200 205
 Arg Ala Glu Asn Leu His Asp Glu Ser Val Lys Val Glu Ser Cys Arg
 210 215 220
 Asp Thr Val Leu Asn Leu Ile Gly Lys Ile Asn Pro Asp Leu Phe Val
 225 230 235 240
 Phe Gly Ile Val Asn Gly Ala Tyr Asn Ala Pro Phe Phe Val Thr Arg
 245 250 255
 Phe Arg Glu Ala Leu Phe His Phe Ser Ser Ile Phe Asp Met Leu Glu
 260 265 270
 Thr Ile Val Pro Arg Glu Asp Glu Glu Arg Met Phe Leu Glu Met Glu
 275 280 285
 Val Phe Gly Arg Glu Ala Leu Asn Val Ile Ala Cys Glu Gly Trp Glu
 290 295 300

Arg	Val	Glu	Arg	Pro	Glu	Thr	Tyr	Lys	Gln	Trp	His	Val	Arg	Ala	Met
305					310					315					320
Arg	Ser	Gly	Leu	Val	Gln	Val	Pro	Phe	Asp	Pro	Ser	Ile	Met	Lys	Thr
				325					330					335	
Ser	Leu	His	Lys	Val	His	Thr	Phe	Tyr	His	Lys	Asp	Phe	Val	Ile	Asp
			340					345					350		
Gln	Asp	Asn	Arg	Trp	Leu	Leu	Gln	Gly	Trp	Lys	Gly	Arg	Thr	Val	Met
		355					360					365			
Ala	Leu	Ser	Val	Trp	Lys	Pro	Glu	Ser							
	370					375									

<210> 114

<211> 381

<212> PRT

<213> Arabidopsis thaliana

<400> 114

Glu	Thr	Ala	Asp	Leu	Arg	Thr	Leu	Leu	Val	Leu	Cys	Ala	Gln	Ala	Val
1				5					10					15	
Ser	Val	Asp	Asp	Arg	Arg	Thr	Ala	Asn	Glu	Met	Leu	Arg	Gln	Ile	Arg
			20					25					30		
Glu	His	Ser	Ser	Pro	Leu	Gly	Asn	Gly	Ser	Glu	Arg	Leu	Ala	His	Tyr
		35				40						45			
Phe	Ala	Asn	Ser	Leu	Glu	Ala	Arg	Leu	Ala	Gly	Thr	Gly	Thr	Gln	Ile
	50					55					60				
Tyr	Thr	Ala	Leu	Ser	Ser	Lys	Lys	Thr	Ser	Ala	Ala	Asp	Met	Leu	Lys
	65				70					75				80	
Ala	Tyr	Gln	Thr	Tyr	Met	Ser	Val	Cys	Pro	Phe	Lys	Lys	Ala	Ala	Ile
				85				90						95	
Ile	Phe	Ala	Asn	His	Ser	Met	Met	Arg	Phe	Thr	Ala	Asn	Ala	Asn	Thr
			100					105					110		
Ile	His	Ile	Ile	Asp	Phe	Gly	Ile	Ser	Tyr	Gly	Phe	Gln	Trp	Pro	Ala
		115					120					125			
Leu	Ile	His	Arg	Leu	Ser	Leu	Ser	Arg	Pro	Gly	Gly	Ser	Pro	Lys	Leu
	130					135					140				
Arg	Ile	Thr	Gly	Ile	Glu	Leu	Pro	Gln	Arg	Gly	Phe	Arg	Pro	Ala	Glu
	145				150					155					160
Glu	Phe	Arg	Arg	Gln	Val	Ile	Ala	Trp	Leu	Asp	Thr	Val	Ser	Asp	Thr
				165				170						175	
Met	Phe	Arg	Leu	Ser	Thr	Thr	Gln	Leu	Leu	Arg	Asn	Gly	Glu	Thr	Ile
			180					185					190		
Gln	Val	Glu	Asp	Leu	Lys	Leu	Arg	Gln	Gly	Glu	Tyr	Val	Val	Val	Asn
		195					200					205			
Ser	Leu	Phe	Arg	Phe	Arg	Asn	Leu	Leu	Asp	Glu	Thr	Val	Leu	Val	Asn
	210					215					220				
Ser	Pro	Arg	Asp	Ala	Val	Leu	Lys	Leu	Ile	Arg	Lys	Ile	Asn	Pro	Asn
	225				230					235					240
Val	Phe	Ile	Pro	Ala	Ile	Leu	Ser	Gly	Asn	Tyr	Asn	Ala	Pro	Phe	Phe
				245					250					255	
Val	Thr	Arg	Phe	Arg	Glu	Ala	Leu	Phe	His	Tyr	Ser	Ala	Val	Phe	Asp
			260					265					270		
Met	Cys	Asp	Ser	Lys	Leu	Ala	Arg	Glu	Asp	Glu	Met	Arg	Leu	Met	Tyr
		275					280					285			
Val	Phe	Glu	Phe	Tyr	Gly	Arg	Glu	Ile	Val	Asn	Val	Val	Ala	Ser	Glu
	290					295					300				
Gly	Thr	Glu	Arg	Val	Glu	Ser	Arg	Glu	Thr	Tyr	Lys	Gln	Trp	Gln	Ala
	305				310					315					320
Arg	Leu	Ile	Arg	Ala	Gly	Phe	Arg	Gln	Leu	Pro	Leu	Glu	Lys	Glu	Leu
				325					330					335	
Met	Gln	Asn	Leu	Lys	Leu	Lys	Ile	Glu	Asn	Gly	Tyr	Asp	Lys	Asn	Phe
			340					345					350		

Asp	Val	Asp	Gln	Asn	Gly	Asn	Trp	Leu	Leu	Gln	Gly	Trp	Lys	Gly	Arg
		355					360					365			
Ile	Val	Tyr	Ala	Ser	Ser	Leu	Trp	Val	Pro	Ser	Ser	Ser			
	370					375					380				

<210> 115
 <211> 352
 <212> PRT
 <213> Arabidosis thaliana

Leu	Ser	Met	Val	Asn	Glu	Leu	Arg	Gln	Ile	Val	Ser	Ile	Gln	Gly	Asp
1				5					10					15	
Pro	Ser	Gln	Arg	Ile	Ala	Ala	Tyr	Met	Val	Glu	Gly	Leu	Ala	Ala	Arg
		20					25						30		
Met	Ala	Ala	Ser	Gly	Lys	Phe	Ile	Tyr	Arg	Ala	Leu	Lys	Cys	Lys	Glu
	35					40						45			
Pro	Pro	Ser	Asp	Glu	Arg	Leu	Ala	Ala	Met	Gln	Val	Leu	Phe	Glu	Val
	50					55					60				
Cys	Pro	Cys	Phe	Lys	Phe	Gly	Phe	Leu	Ala	Ala	Asn	Gly	Ala	Ile	Leu
65				70						75					80
Glu	Ala	Ile	Lys	Gly	Glu	Glu	Glu	Val	His	Ile	Ile	Asp	Phe	Asp	Ile
				85				90						95	
Asn	Gln	Gly	Asn	Gln	Tyr	Met	Thr	Leu	Ile	Arg	Ser	Ile	Ala	Glu	Leu
			100					105					110		
Pro	Gly	Lys	Arg	Pro	Arg	Leu	Arg	Leu	Thr	Gly	Ile	Asp	Asp	Pro	Glu
		115				120						125			
Ser	Val	Gln	Arg	Ser	Ile	Gly	Gly	Leu	Arg	Ile	Ile	Gly	Leu	Arg	Leu
	130					135						140			
Glu	Gln	Leu	Ala	Glu	Asp	Asn	Gly	Val	Ser	Phe	Lys	Phe	Lys	Ala	Met
145				150						155					160
Pro	Ser	Lys	Thr	Ser	Ile	Val	Ser	Pro	Ser	Thr	Leu	Gly	Cys	Lys	Pro
				165				170						175	
Gly	Glu	Thr	Leu	Ile	Val	Asn	Phe	Ala	Phe	Gln	Leu	His	His	Met	Pro
			180				185						190		
Asp	Glu	Ser	Val	Thr	Thr	Val	Asn	Gln	Arg	Asp	Glu	Leu	Leu	His	Met
	195					200						205			
Val	Lys	Ser	Leu	Asn	Pro	Lys	Leu	Val	Thr	Val	Val	Glu	Gln	Asp	Val
	210				215						220				
Asn	Thr	Asn	Thr	Ser	Pro	Phe	Phe	Pro	Arg	Phe	Ile	Glu	Ala	Tyr	Glu
225				230						235					240
Tyr	Tyr	Ser	Ala	Val	Phe	Glu	Ser	Leu	Asp	Met	Thr	Leu	Pro	Arg	Glu
			245					250						255	
Ser	Gln	Glu	Arg	Met	Asn	Val	Glu	Arg	Gln	Cys	Leu	Ala	Arg	Asp	Ile
		260					265						270		
Val	Asn	Ile	Val	Ala	Cys	Glu	Gly	Glu	Glu	Arg	Ile	Glu	Arg	Tyr	Glu
	275					280						285			
Ala	Ala	Gly	Lys	Trp	Arg	Ala	Arg	Met	Met	Met	Ala	Gly	Phe	Asn	Pro
	290				295						300				
Lys	Pro	Met	Ser	Ala	Lys	Val	Thr	Asn	Asn	Ile	Gln	Asn	Leu	Ile	Lys
305					310					315					320
Gln	Gln	Tyr	Cys	Asn	Lys	Tyr	Lys	Leu	Lys	Glu	Glu	Met	Gly	Glu	Leu
			325					330						335	
His	Phe	Cys	Trp	Glu	Glu	Lys	Ser	Leu	Ile	Val	Ala	Ser	Ala	Trp	Arg
			340					345					350		

<210> 116
 <211> 380
 <212> PRT
 <213> Arabidopsis thaliana

<400> 116

Thr Ser Val Cys Ser Arg Gln Thr Val Met Glu Ile Ala Thr Ala Ile
 1 5 10 15
 Ala Glu Gly Lys Thr Glu Ile Ala Thr Glu Ile Leu Ala Arg Val Ser
 20 25 30
 Gln Thr Pro Asn Leu Glu Arg Asn Ser Glu Glu Lys Leu Val Asp Phe
 35 40 45
 Met Val Ala Ala Leu Arg Ser Arg Ile Ala Ser Pro Val Thr Glu Leu
 50 55 60
 Tyr Gly Lys Glu His Leu Ile Ser Thr Gln Leu Leu Tyr Glu Leu Ser
 65 70 75 80
 Pro Cys Phe Lys Leu Gly Phe Glu Ala Ala Asn Leu Ala Ile Leu Asp
 85 90 95
 Ala Ala Asp Asn Asn Asp Gly Gly Met Met Ile Pro His Val Ile Asp
 100 105 110
 Phe Asp Ile Gly Glu Gly Gly Gln Tyr Val Asn Leu Leu Arg Thr Leu
 115 120 125
 Ser Thr Arg Arg Asn Gly Lys Ser Gln Ser Gln Asn Ser Pro Val Val
 130 135 140
 Lys Ile Thr Ala Val Ala Asn Asn Val Tyr Gly Cys Leu Val Asp Asp
 145 150 155 160
 Gly Gly Glu Glu Arg Leu Lys Ala Val Gly Asp Leu Leu Ser Gln Leu
 165 170 175
 Gly Asp Arg Leu Gly Ile Ser Val Ser Phe Asn Val Val Thr Ser Leu
 180 185 190
 Arg Leu Gly Asp Leu Asn Arg Glu Ser Leu Gly Cys Asp Pro Asp Glu
 195 200 205
 Thr Leu Ala Val Asn Leu Ala Phe Lys Leu Tyr Arg Val Pro Asp Glu
 210 215 220
 Ser Val Cys Thr Glu Asn Pro Arg Asp Glu Leu Leu Arg Arg Val Lys
 225 230 235 240
 Gly Leu Lys Pro Arg Val Val Thr Leu Val Glu Gln Glu Met Asn Ser
 245 250 255
 Asn Thr Ala Pro Phe Leu Gly Arg Val Ser Glu Ser Cys Ala Cys Tyr
 260 265 270
 Gly Ala Leu Leu Glu Ser Val Glu Ser Thr Val Pro Ser Thr Asn Ser
 275 280 285
 Asp Arg Ala Lys Val Glu Glu Gly Ile Gly Arg Lys Leu Val Asn Ala
 290 295 300
 Val Ala Cys Glu Gly Ile Asp Arg Ile Glu Arg Cys Glu Val Phe Gly
 305 310 315 320
 Lys Trp Arg Met Arg Met Ser Met Ala Gly Phe Glu Leu Met Pro Leu
 325 330 335
 Ser Glu Lys Ile Ala Glu Ser Met Lys Ser Arg Gly Asn Arg Val His
 340 345 350
 Pro Gly Phe Thr Val Lys Glu Asp Asn Gly Gly Val Cys Phe Gly Trp
 355 360 365
 Met Gly Arg Ala Leu Thr Val Ala Ser Ala Trp Arg
 370 375 380

<210> 117

<211> 374

<212> PRT

<213> Arabidopsis thaliana

<400> 117

Phe Asp Leu Glu Pro Pro Leu Leu Lys Ala Ile Tyr Asp Cys Ala Arg
 1 5 10 15
 Ile Ser Asp Ser Asp Pro Asn Glu Ala Ser Lys Thr Leu Leu Gln Ile
 20 25 30
 Arg Glu Ser Val Ser Glu Leu Gly Asp Pro Thr Glu Arg Val Ala Phe
 35 40 45

Tyr Phe Thr Glu Ala Leu Ser Asn Arg Leu Ser Pro Asn Ser Pro Ala
 50 55 60
 Thr Ser Ser Ser Ser Ser Ser Thr Glu Asp Leu Ile Leu Ser Tyr Lys
 65 70 75 80
 Thr Leu Asn Asp Ala Cys Pro Tyr Ser Lys Phe Ala His Leu Thr Ala
 85 90 95
 Asn Gln Ala Ile Leu Glu Ala Thr Glu Lys Ser Asn Lys Ile His Ile
 100 105 110
 Val Asp Phe Gly Ile Val Gln Gly Ile Gln Trp Pro Ala Leu Leu Gln
 115 120 125
 Ala Leu Ala Thr Arg Thr Ser Gly Lys Pro Thr Gln Ile Arg Val Ser
 130 135 140
 Gly Ile Pro Ala Pro Ser Leu Gly Glu Ser Pro Glu Pro Ser Leu Ile
 145 150 155 160
 Ala Thr Gly Asn Arg Leu Arg Asp Phe Ala Lys Val Leu Asp Leu Asn
 165 170 175
 Phe Asp Phe Ile Pro Ile Leu Thr Pro Ile His Leu Leu Asn Gly Ser
 180 185 190
 Ser Phe Arg Val Asp Pro Asp Glu Val Leu Ala Val Asn Phe Met Leu
 195 200 205
 Gln Leu Tyr Lys Leu Leu Asp Glu Thr Pro Thr Ile Val Asp Thr Ala
 210 215 220
 Leu Arg Leu Ala Lys Ser Leu Asn Pro Arg Val Val Thr Leu Gly Glu
 225 230 235 240
 Tyr Glu Val Ser Leu Asn Arg Val Gly Phe Ala Asn Arg Val Lys Asn
 245 250 255
 Ala Leu Gln Phe Tyr Ser Ala Val Phe Glu Ser Leu Glu Pro Asn Leu
 260 265 270
 Gly Arg Asp Ser Glu Glu Arg Val Arg Val Glu Arg Glu Leu Phe Gly
 275 280 285
 Arg Arg Ile Ser Gly Leu Ile Gly Pro Glu Lys Thr Gly Ile His Arg
 290 295 300
 Glu Arg Met Glu Glu Lys Glu Gln Trp Arg Val Leu Met Glu Asn Ala
 305 310 315 320
 Gly Phe Glu Ser Val Lys Leu Ser Asn Tyr Ala Val Ser Gln Ala Lys
 325 330 335
 Ile Leu Leu Trp Asn Tyr Asn Tyr Ser Asn Leu Tyr Ser Ile Val Glu
 340 345 350
 Ser Lys Pro Gly Phe Ile Ser Leu Ala Trp Asn Asp Leu Pro Leu Leu
 355 360 365
 Thr Leu Ser Ser Trp Arg
 370

<210> 118
 <211> 358
 <212> PRT
 <213> Arabidopsis thaliana

<400> 118
 Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala Ala Glu Val Ile
 1 5 10 15
 Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala Arg Leu Asn Gln
 20 25 30
 Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg Ala Ala Phe Tyr
 35 40 45
 Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val Ser Gln Thr Leu
 50 55 60
 Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr Lys Ser Phe Ser
 65 70 75 80
 Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr Ser Asn Gln Ala
 85 90 95

Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His Ile Ile Asp Phe
 100 105 110
 Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met Gln Glu Leu Val
 115 120 125
 Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile Thr Val Phe Ala
 130 135 140
 Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe Thr Gln Asp Asn
 145 150 155 160
 Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu Asp Ile Gln Val
 165 170 175
 Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro Asn Ser Ser Glu
 180 185 190
 Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser Phe Ser His Leu
 195 200 205
 Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro Thr Ile Ile Val
 210 215 220
 Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro Phe Ser Gln Gln
 225 230 235 240
 Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe Glu Ser Leu Asp
 245 250 255
 Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile Glu Arg Phe Leu
 260 265 270
 Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg Ser Arg Pro Ile
 275 280 285
 Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu Gln Met Gly Phe
 290 295 300
 Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln Ala Glu Cys Leu
 305 310 315 320
 Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu Lys Lys His Asn
 325 330 335
 Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val Gly Val Ser Ala
 340 345 350
 Trp Arg Cys Arg Ser Ser
 355

<210> 119
 <211> 369
 <212> PRT
 <213> Arabidopsis thaliana

<400> 119
 Gly Gly Phe Gly Phe Ile Glu Asp Leu Ile Arg Val Val Asp Cys Val
 1 5 10 15
 Glu Ser Asp Glu Leu Gln Leu Ala Gln Val Val Leu Ser Arg Leu Asn
 20 25 30
 Gln Arg Leu Arg Ser Pro Ala Gly Arg Pro Leu Gln Arg Ala Ala Phe
 35 40 45
 Tyr Phe Lys Glu Ala Leu Gly Ser Phe Leu Thr Gly Ser Asn Arg Asn
 50 55 60
 Pro Ile Arg Leu Ser Ser Trp Ser Glu Ile Val Gln Arg Ile Arg Ala
 65 70 75 80
 Ile Lys Glu Tyr Ser Gly Ile Ser Pro Ile Pro Leu Phe Ser His Phe
 85 90 95
 Thr Ala Asn Gln Ala Ile Leu Asp Ser Leu Ser Ser Gln Ser Ser Ser
 100 105 110
 Pro Phe Val His Val Val Asp Phe Glu Ile Gly Phe Gly Gly Gln Tyr
 115 120 125
 Ala Ser Leu Met Arg Glu Ile Thr Glu Lys Ser Val Ser Gly Gly Phe
 130 135 140
 Leu Arg Val Thr Ala Val Val Ala Glu Glu Cys Ala Val Glu Thr Arg
 145 150 155 160

Leu Val Lys Glu Asn Leu Thr Gln Phe Ala Ala Glu Met Lys Ile Arg
 165 170 175
 Phe Gln Ile Glu Phe Val Leu Met Lys Thr Phe Glu Met Leu Ser Phe
 180 185 190
 Lys Ala Ile Arg Phe Val Glu Gly Glu Arg Thr Val Val Leu Ile Ser
 195 200 205
 Pro Ala Ile Phe Arg Arg Leu Ser Gly Ile Thr Asp Phe Val Asn Asn
 210 215 220
 Leu Arg Arg Val Ser Pro Lys Val Val Val Phe Val Asp Ser Glu Gly
 225 230 235 240
 Trp Thr Glu Ile Ala Gly Ser Gly Ser Phe Arg Arg Glu Phe Val Ser
 245 250 255
 Ala Leu Glu Phe Tyr Thr Met Val Leu Glu Ser Leu Asp Ala Ala Ala
 260 265 270
 Pro Pro Gly Asp Leu Val Lys Lys Ile Val Glu Ala Phe Val Leu Arg
 275 280 285
 Pro Lys Ile Ser Ala Ala Val Glu Thr Ala Ala Asp Arg Arg His Thr
 290 295 300
 Gly Glu Met Thr Trp Arg Glu Ala Phe Cys Ala Ala Gly Met Arg Pro
 305 310 315 320
 Ile Gln Gln Ser Gln Phe Ala Asp Phe Gln Ala Glu Cys Leu Leu Glu
 325 330 335
 Lys Ala Gln Val Arg Gly Phe His Val Ala Lys Arg Gln Gly Glu Leu
 340 345 350
 Val Leu Cys Trp His Gly Arg Ala Leu Val Ala Thr Ser Ala Trp Arg
 355 360 365
 Phe

<210> 120
 <211> 385
 <212> PRT
 <213> Arabidopsis thaliana

<400> 120
 Ala Gln Asn Leu Leu Ser Ile Leu Ser Leu Asn Ser Ser Pro His Gly
 1 5 10 15
 Asp Ser Thr Glu Arg Leu Val His Leu Phe Thr Lys Ala Leu Ser Val
 20 25 30
 Arg Ile Asn Arg Gln Gln Gln Asp Gln Thr Ala Glu Thr Val Ala Thr
 35 40 45
 Trp Thr Thr Asn Glu Met Thr Met Ser Asn Ser Thr Val Phe Thr Ser
 50 55 60
 Ser Val Cys Lys Glu Gln Phe Leu Phe Arg Thr Lys Asn Asn Asn Ser
 65 70 75 80
 Asp Phe Glu Ser Cys Tyr Tyr Leu Trp Leu Asn Gln Leu Thr Pro Phe
 85 90 95
 Ile Arg Phe Gly His Leu Thr Ala Asn Gln Ala Ile Leu Asp Ala Thr
 100 105 110
 Glu Thr Asn Asp Asn Gly Ala Leu His Ile Leu Asp Leu Asp Ile Ser
 115 120 125
 Gln Gly Leu Gln Trp Pro Pro Leu Met Gln Ala Leu Ala Glu Arg Ser
 130 135 140
 Ser Asn Pro Ser Ser Pro Pro Pro Ser Leu Arg Ile Thr Gly Cys Gly
 145 150 155 160
 Arg Asp Val Thr Gly Leu Asn Arg Thr Gly Asp Arg Leu Thr Arg Phe
 165 170 175
 Ala Asp Ser Leu Gly Leu Gln Phe Gln Phe His Thr Leu Val Ile Val
 180 185 190
 Glu Glu Asp Leu Ala Gly Leu Leu Leu Gln Ile Arg Leu Leu Ala Leu
 195 200 205
 Ser Ala Val Gln Gly Glu Thr Ile Ala Val Asn Cys Val His Phe Leu
 210 215 220

His Lys Ile Phe Asn Asp Asp Gly Asp Met Ile Gly His Phe Leu Ser
 225 230 240
 Ala Ile Lys Ser Leu Asn Ser Arg Ile Val Thr Met Ala Glu Arg Glu
 245 250 255
 Ala Asn His Gly Asp His Ser Phe Leu Asn Arg Phe Ser Glu Ala Val
 260 265 270
 Asp His Tyr Met Ala Ile Phe Asp Ser Leu Glu Ala Thr Leu Pro Pro
 275 280 285
 Asn Ser Arg Glu Arg Leu Thr Leu Glu Gln Arg Trp Phe Gly Lys Glu
 290 295 300
 Ile Leu Asp Val Val Ala Ala Glu Glu Thr Glu Arg Lys Gln Arg His
 305 310 315 320
 Arg Arg Phe Glu Ile Trp Glu Glu Met Met Lys Arg Phe Gly Phe Val
 325 330 335
 Asn Val Pro Ile Gly Ser Phe Ala Leu Ser Gln Ala Lys Leu Leu Leu
 340 345 350
 Arg Leu His Tyr Pro Ser Glu Gly Tyr Asn Leu Gln Phe Leu Asn Asn
 355 360 365
 Ser Leu Phe Leu Gly Trp Gln Asn Arg Pro Leu Phe Ser Val Ser Ser
 370 375 380
 Trp
 385

<210> 121
 <211> 369
 <212> PRT
 <213> Arabidopsis thaliana

<400> 121
 Asn Gly Val Arg Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val
 1 5 10 15
 Gln Lys Glu Asn Leu Thr Val Ala Glu Ala Leu Val Lys Gln Ile Gly
 20 25 30
 Phe Leu Ala Val Ser Gln Ile Gly Ala Met Arg Lys Val Ala Thr Tyr
 35 40 45
 Phe Ala Glu Ala Leu Ala Arg Arg Ile Tyr Arg Leu Ser Pro Ser Gln
 50 55 60
 Ser Pro Ile Asp His Ser Leu Ser Asp Thr Leu Gln Met His Phe Tyr
 65 70 75 80
 Glu Thr Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
 85 90 95
 Ile Leu Glu Ala Phe Gln Gly Lys Lys Arg Val His Val Ile Asp Phe
 100 105 110
 Ser Met Ser Gln Gly Leu Gln Trp Pro Ala Leu Met Gln Ala Leu Ala
 115 120 125
 Leu Arg Pro Gly Gly Pro Pro Val Phe Arg Leu Thr Gly Ile Gly Pro
 130 135 140
 Pro Ala Pro Asp Asn Phe Asp Tyr Leu His Glu Val Gly Cys Lys Leu
 145 150 155 160
 Ala His Leu Ala Glu Ala Ile His Val Glu Phe Glu Tyr Arg Gly Phe
 165 170 175
 Val Ala Asn Thr Leu Ala Asp Leu Asp Ala Ser Met Leu Glu Leu Arg
 180 185 190
 Pro Ser Glu Ile Glu Ser Val Ala Val Asn Ser Val Phe Glu Leu His
 195 200 205
 Lys Leu Leu Gly Arg Pro Gly Ala Ile Asp Lys Val Leu Gly Val Val
 210 215 220
 Asn Gln Ile Lys Pro Glu Ile Phe Thr Val Val Glu Gln Glu Ser Asn
 225 230 235 240
 His Asn Ser Pro Ile Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr
 245 250 255

Tyr Ser Thr Leu Phe Asp Ser Leu Glu Gly Val Pro Ser Gly Gln Asp
 260 265 270
 Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile Cys Asn Val Val
 275 280 285
 Ala Cys Asp Gly Pro Asp Arg Val Glu Arg His Glu Thr Leu Ser Gln
 290 295 300
 Trp Arg Asn Arg Phe Gly Ser Ala Gly Phe Ala Ala Ala His Ile Gly
 305 310 315 320
 Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ala Leu Phe Asn Gly
 325 330 335
 Gly Glu Gly Tyr Arg Val Glu Glu Ser Asp Gly Cys Leu Met Leu Gly
 340 345 350
 Trp His Thr Arg Pro Leu Ile Ala Thr Ser Ala Trp Lys Leu Ser Thr
 355 360 365
 Asn

<210> 122
 <211> 371
 <212> PRT
 <213> Arabidopsis thaliana

<400> 122
 Asn Gly Val Arg Leu Val His Ala Leu Met Ala Cys Ala Glu Ala Ile
 1 5 10 15
 Gln Gln Asn Asn Leu Thr Leu Ala Glu Ala Leu Val Lys Gln Ile Gly
 20 25 30
 Cys Leu Ala Val Ser Gln Ala Gly Ala Met Arg Lys Val Ala Thr Tyr
 35 40 45
 Phe Ala Glu Ala Leu Ala Arg Arg Ile Tyr Arg Leu Ser Pro Pro Gln
 50 55 60
 Asn Gln Ile Asp His Cys Leu Ser Asp Thr Leu Gln Met His Phe Tyr
 65 70 75 80
 Glu Thr Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
 85 90 95
 Ile Leu Glu Ala Phe Glu Gly Lys Lys Arg Val His Val Ile Asp Phe
 100 105 110
 Ser Met Asn Gln Gly Leu Gln Trp Pro Ala Leu Met Gln Ala Leu Ala
 115 120 125
 Leu Arg Glu Gly Gly Pro Pro Thr Phe Arg Leu Thr Gly Ile Gly Pro
 130 135 140
 Pro Ala Pro Asp Asn Ser Asp His Leu His Glu Val Gly Cys Lys Leu
 145 150 155 160
 Ala Gln Leu Ala Glu Ala Ile His Val Glu Phe Glu Tyr Arg Gly Phe
 165 170 175
 Val Ala Asn Ser Leu Ala Asp Leu Asp Ala Ser Met Leu Glu Leu Arg
 180 185 190
 Pro Ser Asp Thr Glu Ala Val Ala Val Asn Ser Val Phe Glu Leu His
 195 200 205
 Lys Leu Leu Gly Arg Pro Gly Gly Ile Glu Lys Val Leu Gly Val Val
 210 215 220
 Lys Gln Ile Lys Pro Val Ile Phe Thr Val Val Glu Gln Glu Ser Asn
 225 230 235 240
 His Asn Gly Pro Val Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr
 245 250 255
 Tyr Ser Thr Leu Phe Asp Ser Leu Glu Gly Val Pro Asn Ser Gln Asp
 260 265 270
 Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile Cys Asn Leu Val
 275 280 285
 Ala Cys Glu Gly Pro Asp Arg Val Glu Arg His Glu Thr Leu Ser Gln
 290 295 300
 Trp Gly Asn Arg Phe Gly Ser Ser Gly Leu Ala Pro Ala His Leu Gly
 305 310 315 320

Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ser Val Phe Asn Ser
 325 330 335
 Gly Gln Gly Tyr Arg Val Glu Glu Ser Asn Gly Cys Leu Met Leu Gly
 340 345 350
 Trp His Thr Arg Pro Leu Ile Thr Thr Ser Ala Trp Lys Leu Ser Thr
 355 360 365
 Ala Ala Tyr
 370

<210> 123
 <211> 364
 <212> PRT
 <213> Arabidopsis thaliana

<400> 123
 Thr Gly Val Arg Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val
 1 5 10 15
 Gln Gln Asn Asn Leu Lys Leu Ala Asp Ala Leu Val Lys His Val Gly
 20 25 30
 Leu Leu Ala Ser Ser Gln Ala Gly Ala Met Arg Lys Val Ala Thr Tyr
 35 40 45
 Phe Ala Glu Gly Leu Ala Arg Arg Ile Tyr Arg Ile Tyr Pro Arg Asp
 50 55 60
 Asp Val Ala Ser Ser Ser Phe Ser Asp Thr Leu Gln Ile His Phe Tyr
 65 70 75 80
 Glu Ser Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
 85 90 95
 Ile Leu Glu Val Phe Ala Thr Ala Glu Lys Val His Val Ile Asp Leu
 100 105 110
 Gly Leu Asn His Gly Leu Gln Trp Pro Ala Leu Ile Gln Ala Leu Ala
 115 120 125
 Leu Arg Pro Asn Gly Pro Pro Asp Phe Arg Leu Thr Gly Ile Gly Tyr
 130 135 140
 Ser Leu Thr Asp Ile Gln Glu Val Gly Trp Lys Leu Gly Gln Leu Ala
 145 150 155 160
 Ser Thr Ile Gly Val Asn Phe Glu Phe Lys Ser Ile Ala Leu Asn Asn
 165 170 175
 Leu Ser Asp Leu Lys Pro Glu Met Leu Asp Ile Arg Pro Gly Leu Glu
 180 185 190
 Ser Val Ala Val Asn Ser Val Phe Glu Leu His Arg Leu Leu Ala His
 195 200 205
 Pro Gly Ser Ile Asp Lys Phe Leu Ser Thr Ile Lys Ser Ile Arg Pro
 210 215 220
 Asp Ile Met Thr Val Val Glu Gln Glu Ala Asn His Asn Gly Thr Val
 225 230 235 240
 Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr Tyr Ser Ser Leu Phe
 245 250 255
 Asp Ser Leu Glu Gly Pro Pro Ser Gln Asp Arg Val Met Ser Glu Leu
 260 265 270
 Phe Leu Gly Arg Gln Ile Leu Asn Leu Val Ala Cys Glu Gly Glu Asp
 275 280 285
 Arg Val Glu Arg His Glu Thr Leu Asn Gln Trp Arg Asn Arg Phe Gly
 290 295 300
 Leu Gly Gly Phe Lys Pro Val Ser Ile Gly Ser Asn Ala Tyr Lys Gln
 305 310 315 320
 Ala Ser Met Leu Leu Ala Leu Tyr Ala Gly Ala Asp Gly Tyr Asn Val
 325 330 335
 Glu Glu Asn Glu Gly Cys Leu Leu Leu Gly Trp Gln Thr Arg Pro Leu
 340 345 350
 Ile Ala Thr Ser Ala Trp Arg Ile Asn Arg Val Glu
 355 360

<210> 124
 <211> 368
 <212> PRT
 <213> Arabidopsis thaliana

<400> 124
 Glu Gly Leu His Leu Leu Thr Leu Leu Leu Gln Cys Ala Glu Ala Val
 1 5 10 15
 Ser Ala Asp Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser
 20 25 30
 Gln Leu Ser Thr Pro Tyr Gly Thr Ser Ala Gln Arg Val Ala Ala Tyr
 35 40 45
 Phe Ser Glu Ala Met Ser Ala Arg Leu Leu Asn Ser Cys Leu Gly Ile
 50 55 60
 Tyr Ala Ala Leu Pro Ser Arg Trp Met Pro Gln Thr His Ser Leu Lys
 65 70 75 80
 Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Lys
 85 90 95
 Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Lys
 100 105 110
 Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu Gln
 115 120 125
 Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly Pro Pro
 130 135 140
 His Val Arg Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu Gln Ala
 145 150 155 160
 Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Lys Leu Gly Leu Pro Phe
 165 170 175
 Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg
 180 185 190
 Leu Asn Val Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His
 195 200 205
 Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu
 210 215 220
 Gln Arg Leu Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser
 225 230 235 240
 His Ala Gly Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr
 245 250 255
 Ser Ala Leu Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu
 260 265 270
 Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile Arg Asn
 275 280 285
 Val Leu Ala Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu
 290 295 300
 Ser Trp Arg Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu
 305 310 315 320
 Ala Gly Asn Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro
 325 330 335
 Ser Asp Gly Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys Leu Gly
 340 345 350
 Trp Lys Asp Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro Arg Ser
 355 360 365

<210> 125
 <211> 325
 <212> PRT
 <213> Arabidopsis thaliana

<400> 125
 Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
 1 5 10 15

Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
 20 25 30
 Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
 35 40 45
 Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
 50 55 60
 Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
 65 70 75 80
 Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
 85 90 95
 Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
 100 105 110
 Arg Lys Asn Cys Ala Leu Arg Phe Gln Asn Asn Pro Ser Gly Val Asp
 115 120 125
 Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
 130 135 140
 Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
 145 150 155 160
 Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
 165 170 175
 Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
 180 185 190
 Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
 195 200 205
 Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
 210 215 220
 Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
 225 230 235 240
 Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
 245 250 255
 His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
 260 265 270
 Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
 275 280 285
 Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
 290 295 300
 Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
 305 310 315 320
 Trp Arg Cys Arg Lys
 325

<210> 126
 <211> 248
 <212> PRT
 <213> Arabidopsis thaliana

<400> 126
 Leu Ala Glu Phe Val Asp Leu Thr Pro Trp His Arg Phe Gly Phe Ile
 1 5 10 15
 Ala Ala Asn Ala Ala Ile Leu Asp Ala Val Glu Gly Tyr Ser Ser Val
 20 25 30
 His Ile Val Asp Leu Ser Leu Thr His Cys Met Gln Ile Pro Thr Leu
 35 40 45
 Ile Asp Ser Met Ala Asn Lys Leu His Lys Lys Pro Pro Pro Leu Leu
 50 55 60
 Lys Leu Thr Val Ile Ala Ser Asp Ala Glu Phe His Pro Pro Pro Leu
 65 70 75 80
 Leu Gly Ile Ser Tyr Glu Glu Leu Gly Ser Lys Leu Val Asn Phe Ala
 85 90 95
 Thr Thr Arg Asn Val Ala Met Glu Phe Arg Ile Ile Ser Ser Tyr
 100 105 110

Ser Asp Gly Leu Ser Ser Leu Ile Glu Gln Leu Arg Ile Asp Pro Phe
 115 120 125
 Val Phe Asn Glu Ala Leu Val Val Asn Cys His Met Met Leu His Tyr
 130 135 140
 Ile Pro Asp Glu Ile Leu Thr Ser Asn Leu Arg Ser Val Phe Leu Lys
 145 150 155 160
 Glu Leu Arg Asp Leu Asn Pro Thr Ile Val Thr Leu Ile Asp Glu Asp
 165 170 175
 Ser Asp Phe Thr Ser Thr Asn Val Glu Arg Leu Glu Pro Phe Thr Gly
 180 185 190
 Val Gly Phe Gly Glu Thr Ala Met Thr Glu Val Lys Thr Met Leu Glu
 195 200 205
 Glu His Ala Thr Gly Trp Gly Met Lys Lys Asp Val Asp Asp Asp Asn
 210 215 220
 Asp Val Glu Arg Phe Val Leu Thr Trp Lys Gly His Ser Val Met Phe
 225 230 235 240
 Ala Ser Ala Trp Ala Pro Pro Asn
 245

<210> 127

<211> 284

<212> PRT

<213> Arabidopsis thaliana

<400> 127

Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
 1 5 10 15
 Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
 20 25 30
 Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
 35 40 45
 Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
 50 55 60
 Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
 65 70 75 80
 Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
 85 90 95
 His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
 100 105 110
 Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
 115 120 125
 Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
 130 135 140
 Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
 145 150 155 160
 Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
 165 170 175
 Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
 180 185 190
 Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
 195 200 205
 Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
 210 215 220
 Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
 225 230 235 240
 Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
 245 250 255
 His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
 260 265 270
 Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly
 275 280

<210> 128
 <211> 294
 <212> PRT
 <213> Arabidopsis thaliana

<400> 128
 Met His Ile Leu Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu
 1 5 10 15
 Ser Ala Asn Gly Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val
 20 25 30
 His Ile Ile Asp Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu
 35 40 45
 Ile Arg Ala Leu Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile
 50 55 60
 Thr Gly Ile Asp Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu
 65 70 75 80
 Glu Leu Val Gly Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val
 85 90 95
 Pro Phe Glu Phe His Gly Ala Ala Leu Cys Cys Thr Glu Val Glu Ile
 100 105 110
 Glu Lys Leu Gly Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro
 115 120 125
 Leu Val Leu His His Met Pro Asp Glu Ser Val Thr Val Glu Asn His
 130 135 140
 Arg Asp Arg Leu Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val
 145 150 155 160
 Thr Leu Val Glu Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro
 165 170 175
 Arg Phe Val Glu Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile
 180 185 190
 Asp Val Lys Leu Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln
 195 200 205
 His Cys Leu Ala Arg Glu Val Val Asn Leu Ile Ala Cys Glu Gly Val
 210 215 220
 Glu Arg Glu Glu Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe
 225 230 235 240
 His Met Ala Gly Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala
 245 250 255
 Thr Ile Lys Gly Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu
 260 265 270
 Glu Arg Asp Gly Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile
 275 280 285
 Thr Ser Cys Ala Trp Arg
 290

<210> 129
 <211> 205
 <212> PRT
 <213> Arabidopsis thaliana

<400> 129
 Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
 1 5 10 15
 Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp
 20 25 30
 Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
 35 40 45
 Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
 50 55 60
 Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
 65 70 75 80

Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Ala Glu Asp
 85 90 95
 Glu Tyr Lys Asn Arg Ser Leu Leu Glu Arg Glu Leu Leu Val Arg Asp
 100 105 110
 Ala Met Ser Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
 115 120 125
 Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
 130 135 140
 Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
 145 150 155 160
 Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
 165 170 175
 Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
 180 185 190
 Lys Pro Ala Glu Lys Phe Thr Asn Asn Asn Leu Asn Ile
 195 200 205

<210> 130
 <211> 158
 <212> PRT
 <213> Arabidopsis thaliana

<400> 130
 Pro Asp Pro Val Gln Ser Asn Lys Leu Leu Asn Thr Val Lys Ala Ile
 1 5 10 15
 Lys Pro Ser Ile Val Thr Val Val Glu Gln Glu Ala Asn His Asn Gly
 20 25 30
 Ile Val Phe Leu Asp Arg Phe Asn Glu Ala Leu His Tyr Tyr Ser Ser
 35 40 45
 Leu Phe Asp Ser Leu Glu Asp Ser Tyr Ser Leu Pro Ser Gln Asp Arg
 50 55 60
 Val Met Ser Glu Val Tyr Leu Gly Arg Gln Ile Leu Asn Val Val Ala
 65 70 75 80
 Ala Glu Gly Ser Asp Arg Val Glu Arg His Glu Thr Ala Ala Gln Trp
 85 90 95
 Arg Ile Arg Met Lys Ser Ala Gly Phe Asp Pro Ile His Leu Gly Ser
 100 105 110
 Ser Ala Phe Lys Gln Ala Ser Met Leu Leu Ser Leu Tyr Ala Thr Gly
 115 120 125
 Asp Gly Tyr Arg Val Glu Glu Asn Asp Gly Cys Leu Met Ile Gly Trp
 130 135 140
 Gln Thr Arg Pro Leu Ile Thr Thr Ser Ala Trp Lys Leu Ala
 145 150 155

<210> 131
 <211> 112
 <212> PRT
 <213> Arabidopsis thaliana

<400> 131
 Ser Leu Glu Pro Asn Leu Asp Arg Asp Ser Lys Glu Arg Leu Arg Val
 1 5 10 15
 Glu Arg Val Leu Phe Gly Arg Arg Ile Met Asp Leu Val Arg Ser Asp
 20 25 30
 Asp Asp Asn Asn Lys Pro Gly Thr Arg Phe Gly Leu Met Glu Glu Lys
 35 40 45
 Glu Gln Trp Arg Val Leu Met Glu Lys Ala Gly Phe Glu Pro Val Lys
 50 55 60
 Pro Ser Asn Tyr Ala Val Ser Gln Ala Lys Leu Leu Leu Trp Asn Tyr
 65 70 75 80
 Asn Tyr Ser Thr Leu Tyr Ser Leu Val Glu Ser Glu Pro Gly Phe Ile
 85 90 95

Ser Leu Ala Trp Asn Asn Val Pro Leu Leu Thr Val Ser Ser Trp Arg
 100 105 110

<210> 132
 <211> 77
 <212> PRT
 <213> Arabidopsis thaliana

<400> 132
 Ser Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu
 1 5 10 15
 Met Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val
 20 25 30
 Asp Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala
 35 40 45
 Arg Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp
 50 55 60
 Ser Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr
 65 70 75

<210> 133
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<220>
 <221> modified_base
 <222> 9, 12
 <223> n=i

<220>
 <221> modified_base
 <222> 21
 <223> n=a, c, g, or t

<400> 133
 cayttyacng cnaaycargc nat

23

<210> 134
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> sequence 133 amino acid translation

<400> 134
 His Phe Thr Ala Asn Gln Ala Ile
 1 5

<210> 135
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<220>

<221> modified_base
<222> 12
<223> n=i

<220>
<221> modified_base
<222> 27
<223> n=a, c, g, or t

<400> 135
acgtctcgag tncayathat hgayttnga

29

<210> 136
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 135 amino acid translation

<220>
<221> SITE
<222> (6)
<223> Xaa=Leu or Phe

<400> 136
Val His Ile Ile Asp Xaa Asp
1 5

<210> 137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<220>
<221> modified_base
<222> 3,12
<223> n=i

<220>
<221> modified_base
<222> 18
<223> n=a, c, g, or t

<400> 137
ytncartgyg cngargcngt

20

<210> 138
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 137 amino acid translation

<400> 138
Leu Gln Cys Ala Glu Ala Val
1 5

<210> 139
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<220>
<221> modified_base
<222> 12,15
<223> n=i

<220>
<221> modified_base
<222> 18,21
<223> n=a, c, g, or t

<400> 139
ckccmgtktg gnggncncc ngg

23

<210> 140
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 139 amino acid translation

<220>
<221> SITE
<222> 6
<223> Xaa=His, Asn or Lys

<220>
<221> SITE
<222> 7
<223> Xaa=Val, Leu or Phe

<400> 140
Pro Gly Gly Pro Pro Xaa Xaa Arg
1 5

<210> 141
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<220>
<221> modified_base
<222> 3,12
<223> n=i

<220>
<221> modified_base
<222> 21
<223> n=a, c, g, or t

<400> 141

atnccrtttra anacytgraa ngc

23

<210> 142

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> sequence 141 amino acid translation

<400> 142

Ala Phe Gln Val Phe Asn Gly Ile

1

5

<210> 143

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<220>

<221> modified_base

<222> 9,15

<223> n=i

<220>

<221> modified_base

<222> 12

<223> n=a, c, g, or t

<400> 143

atrtgraana rncnnggcca ytg

23

<210> 144

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> sequence 143 amino acid translation

<400> 144

Gln Trp Pro Gly Leu Phe His Ile

1

5

<210> 145

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Arabidopsis GRAS alleles conserved motif

<400> 145

Val His Ile Ile Asp

1

5

<210> 146

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Arabidopsis GRAS alleles conserved motif

<400> 146

Ser Ala Trp

1

<210> 147

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Arabidopsis GRAS alleles conserved motif

<400> 147

Pro Phe Tyr Arg Glu

1

5

<210> 148

<211> 76

<212> PRT

<213> Arabidopsis sp.

<400> 148

Ser Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu

1

5

10

15

Met Arg Lys Asn Cys Ala Leu Arg Phe Asn Asn Pro Ser Gly Val Asp

20

25

30

Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg

35

40

45

Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser

50

55

60

Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr

65

70

75

<210> 149

<211> 424

<212> PRT

<213> Arabidopsis thaliana

<220>

<221> SITE

<222> 269

<223> Xaa = any amino acid

<400> 149

Asn Lys Arg Leu Lys Ser Cys Ser Ser Pro Asp Ser Met Val Thr Ser

1

5

10

15

Thr Ser Thr Gly Thr Gln Ile Gly Gly Val Ile Gly Thr Thr Val Thr

20

25

30

Thr Thr Thr Thr Thr Thr Thr Ala Ala Ala Glu Ser Thr Arg Ser Val

35

40

45

Ile Leu Val Asp Ser Gln Glu Asn Gly Val Arg Leu Val His Ala Leu

50

55

60

Met Ala Cys Ala Glu Ala Ile Gln Gln Asn Asn Leu Thr Leu Ala Glu

65

70

75

80

Ala Leu Val Lys Gln Ile Gly Cys Leu Ala Val Ser Gln Ala Gly Ala

85

90

95

Met Arg Lys Val Ala Thr Tyr Phe Ala Glu Ala Leu Ala Arg Arg Ile
 100 105 110
 Tyr Arg Leu Ser Pro Pro Gln Asn Gln Ile Asp His Cys Leu Ser Asp
 115 120 125
 Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro Tyr Leu Lys Phe Ala
 130 135 140
 His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala Phe Glu Gly Lys Lys
 145 150 155 160
 Arg Val His Val Ile Asp Phe Ser Met Asn Gln Gly Leu Gln Trp Pro
 165 170 175
 Ala Leu Met Gln Ala Leu Ala Leu Arg Glu Gly Gly Pro Pro Thr Phe
 180 185 190
 Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp Asn Ser Asp His Leu
 195 200 205
 His Glu Val Gly Cys Lys Leu Ala Gln Leu Ala Glu Ala Ile His Val
 210 215 220
 Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Ser Leu Ala Asp Leu Asp
 225 230 235 240
 Ala Ser Met Leu Glu Leu Arg Pro Ser Asp Thr Glu Ala Val Ala Val
 245 250 255
 Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly Arg Xaa Gly Gly Ile
 260 265 270
 Glu Lys Val Leu Gly Val Val Asn Gln Ile Lys Glu Pro Glu Ile Phe
 275 280 285
 Thr Val Val Glu Gln Glu Ser Asn His Asn Ser Pro Ile Phe Asp Arg
 290 295 300
 Phe Thr Glu Ser Leu His Tyr Tyr Ser Thr Leu Phe Asp Ser Leu Glu
 305 310 315 320
 Gly Val Pro Ser Gly Gln Asp Lys Val Met Ser Glu Val Tyr Leu Gly
 325 330 335
 Lys Gln Ile Cys Asn Val Val Ala Cys Asp Gly Pro Asp Arg Val Glu
 340 345 350
 Arg His Glu Thr Leu Ser Gln Trp Arg Asn Arg Phe Gly Ser Ala Gly
 355 360 365
 Phe Ala Ala Ala His Ile Gly Ser Asn Ala Phe Lys Gln Ala Ser Met
 370 375 380
 Leu Leu Ala Leu Phe Asn Gly Gly Glu Gly Tyr Arg Val Glu Glu Ser
 385 390 395 400
 Asp Gly Cys Leu Met Leu Gly Trp His Thr Arg Pro Leu Ile Ala Thr
 405 410 415
 Ser Ala Trp Lys Leu Ser Thr Asn
 420
 <210> 150
 <211> 406
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 150
 Gly Gly Gly Gly Asp Thr Tyr Thr Thr Asn Lys Arg Leu Lys Cys Ser
 1 5 10 15
 Asn Gly Val Val Glu Thr Thr Thr Ala Thr Ala Glu Ser Thr Arg His
 20 25 30
 Val Val Leu Val Asp Ser Gln Glu Asn Gly Val Arg Leu Val His Ala
 35 40 45
 Leu Leu Ala Cys Ala Glu Ala Val Gln Lys Glu Asn Leu Thr Val Ala
 50 55 60
 Glu Ala Leu Val Lys Gln Ile Gly Phe Leu Ala Val Ser Gln Ile Gly
 65 70 75 80
 Ala Met Arg Gln Val Ala Thr Tyr Phe Ala Glu Ala Leu Ala Arg Arg
 85 90 95
 Ile Tyr Arg Leu Ser Pro Ser Gln Ser Pro Ile Asp His Ser Leu Ser
 100 105 110

Asp Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro Tyr Leu Lys Phe
 115 120 125
 Ala His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala Phe Gln Gly Lys
 130 135 140
 Lys Arg Val His Val Ile Asp Phe Ser Met Ser Gln Gly Leu Gln Trp
 145 150 155 160
 Pro Ala Leu Met Gln Ala Leu Ala Leu Arg Pro Gly Gly Pro Pro Val
 165 170 175
 Phe Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp Asn Phe Asp Tyr
 180 185 190
 Leu His Glu Val Gly Cys Lys Leu Ala His Leu Ala Glu Ala Ile His
 195 200 205
 Val Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Thr Leu Ala Asp Leu
 210 215 220
 Asp Ala Ser Met Leu Glu Leu Arg Pro Ser Glu Ile Glu Ser Val Ala
 225 230 235 240
 Val Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly Arg Pro Gly Ala
 245 250 255
 Ile Asp Lys Val Leu Gly Val Val Lys Gln Ile Lys Pro Val Ile Phe
 260 265 270
 Thr Val Val Glu Gln Glu Ser Asn His Asn Gly Pro Val Phe Leu Asp
 275 280 285
 Arg Phe Thr Glu Ser Leu His Tyr Tyr Ser Thr Leu Glu Gly Val Pro
 290 295 300
 Asn Ser Gln Asp Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile
 305 310 315 320
 Cys Asn Leu Val Ala Cys Glu Gly Pro Asp Arg Val Glu Arg His Glu
 325 330 335
 Thr Leu Ser Gln Trp Gly Asn Arg Phe Gly Ser Ser Gly Leu Ala Pro
 340 345 350
 Ala His Leu Gly Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ser
 355 360 365
 Val Phe Asn Ser Gly Gln Tyr Arg Val Glu Glu Ser Asn Gly Cys Leu
 370 375 380
 Met Leu Gly Trp His Thr Arg Pro Leu Ile Thr Thr Ser Ala Trp Lys
 385 390 395 400
 Leu Ser Thr Ala Ala Tyr
 405

<210> 151
 <211> 376
 <212> PRT
 <213> Arabidopsis thaliana

<400> 151
 Asp Leu Thr Ser Val Asn Asp Met Ser Leu Phe Gly Gly Ser Gly Ser
 1 5 10 15
 Ser Gln Arg Tyr Gly Leu Pro Val Pro Arg Ser Gln Thr Gln Gln
 20 25 30
 Gln Ser Asp Tyr Gly Leu Phe Gly Gly Ile Arg Met Gly Ile Gly Ser
 35 40 45
 Gly Ile Asn Asn Tyr Pro Thr Leu Thr Gly Val Pro Cys Ile Glu Pro
 50 55 60
 Val Gln Asn Arg His Val Glu Ser Glu Asn Met Leu Asn Ser Leu Arg
 65 70 75 80
 Glu Leu Glu Lys Gln Leu Leu Asp Asp Asp Glu Ser Gly Gly Asp
 85 90 95
 Asp Asp Val Ser Val Ile Thr Asn Ser Asn Ser Asp Trp Ile Gln Asn
 100 105 110
 Leu Val Thr Pro Asn Pro Asn Pro Asn Pro Val Leu Ser Phe Ser Pro
 115 120 125
 Ser Ser Ser Ser Ser Ser Ser Ser Pro Ser Thr Ala Ser Thr Thr Thr
 130 135 140

Ser Val Cys Ser Arg Gln Thr Val Met Glu Ile Ala Thr Ala Ile Ala
 145 150 155 160
 Glu Gly Lys Thr Glu Ile Ala Thr Glu Ile Leu Ala Arg Val Ser Gln
 165 170 175
 Thr Pro Asn Leu Glu Arg Asn Ser Glu Glu Lys Leu Val Asp Phe Arg
 180 185 190
 Asn Ser Glu Glu Lys Leu Val Asp Phe Met Val Ala Ala Leu Arg Ser
 195 200 205
 Arg Ile Ala Ser Pro Val Thr Glu Leu Tyr Gly Lys Glu His Leu Ile
 210 215 220
 Ser Thr Gln Leu Leu Tyr Glu Leu Ser Pro Cys Phe Lys Leu Gly Phe
 225 230 235 240
 Glu Ala Ala Asn Leu Ala Ile Leu Asp Ala Ala Asp Asn Asn Asp Gly
 245 250 255
 Gly Met Met Ile Pro His Val Ile Asp Phe Asp Ile Gly Glu Gly Gly
 260 265 270
 Gln Tyr Val Asn Leu Leu Arg Thr Leu Ser Thr Arg Arg Asn Gly Lys
 275 280 285
 Ser Gln Ser Gln Asn Ser Pro Val Val Lys Ile Thr Ala Val Ala Asn
 290 295 300
 Asn Tyr Gly Asp Cys Leu Val Asp Asp Gly Gly Glu Glu Arg Leu Lys
 305 310 315 320
 Ala Val Gly Asp Leu Leu Ser Gln Leu Gly Asp His Ser Ile Ser Val
 325 330 335
 Ser Phe Asn Val Val Thr Ser Leu Arg Leu Gly Asp Leu Asn Arg Glu
 340 345 350
 Ser Leu Gly Cys Asp Pro Asp Glu Thr Leu Ala Val Asn Leu Ala Phe
 355 360 365
 Lys Leu Tyr Arg Val Pro Asp Glu
 370 375

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 <213> Arabidopsis thaliana

<220>
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 <223> Xaa = STOP

<400> 152

Ala Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg Glu Ala Leu Phe
 1 5 10 15
 His Phe Ser Ser Ile Phe Asp Met Leu Glu Thr Ile Val Pro Arg Glu
 20 25 30
 Asp Glu Glu Arg Met Phe Leu Glu Met Glu Val Phe Gly Arg Glu Ala
 35 40 45
 Leu Asn Val Ile Ala Cys Glu Gly Trp Glu Arg Val Glu Arg Pro Glu
 50 55 60
 Thr Tyr Lys Gln Trp His Val Arg Ala Met Arg Ser Gly Leu Val Gln
 65 70 75 80
 Val Pro Phe Asp Pro Ser Ile Met Lys Thr Ser Leu His Lys Val His
 85 90 95

Thr Phe Tyr His Lys Asp Phe Val Ile Asp Gln Asp Asn Arg Trp Leu
100 105 110

Leu Gln Gly Trp Lys Gly Arg Thr Val Met Ala Leu Ser Val Trp Lys
115 120 125

Pro Glu Ser Xaa
130

D'
anal.